Submission for the Senate Committee Inquiry into Hearing Health in Australia

Dr Damien Howard

Phoenix Consulting

Submission to the Senate Committee Inquiry into Hearing Health in Australia

October 2009

Dr Damien Howard
Phoenix Consulting
Office: 1 Phoenix Street, Nightcliff NT
Mail: PO Box 793, Nightcliff NT 0814

Tel: (08) 8948 4444
Fax: (08) 8930 9003
Mobile: 0412 484 487
Email: damien@phoenixconsulting.com.au

Internet Sites
Social Outcomes of Hearing Loss

- www.eartroubles.com
- http://www.hstac.com.au/HearThis

The painting on the cover of this report is by Valda Gaykamunga.

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Dr Damien Howard has been working in the area of Indigenous hearing loss, especially the psycho-social outcomes of Indigenous hearing loss for 30 years. This submission for the Senate Committee Inquiry into Hearing Health in Australia addresses section e) specific issues affecting Indigenous communities. It considers in some detail the implications of hearing impairment among Indigenous people for individuals and the community.

The profile of hearing loss among Indigenous people is different to that in the mainstream community. Endemic childhood middle ear disease causes more extensive, early onset hearing loss that has more whole of life consequences and costs. The implications for hearing loss in the Indigenous community are more pervasive because of the greater numbers, early onset and compounding auditory processing difficulties.

These implications include diminished opportunities to access health and educational opportunities, involvement in sports and employment, over representation of Indigenous people in the criminal justice system and with mental health problems, as well as influencing family life. A different and greater response in all of the above sectors is required to meet the needs of Indigenous people who are hard-of-hearing and/or have auditory processing problems. Throughout this submission, points are illustrated by real life examples, web-linked audio visual resources and examples of types of resources that can help to address specific issues.

Indigenous people with hearing loss and its outcomes are an invisible and largely neglected issue that contributes significantly to Indigenous disadvantage. There is an urgent need for research and action in many areas. The ongoing failure of mainstream institutions to engage with this issue contributes to the national disgrace that Indigenous disadvantage represents for all Australians.

BACKGROUND

Phoenix Consulting is a Darwin based consulting company that provides consultancy, research and psychology services with a focus on Indigenous issues. It has a particular interest in the psycho-social and educational outcomes of hearing loss and auditory processing problems among Indigenous Australians. Dr Damien Howard, the director of Phoenix Consulting, has worked in this area for 30 years. His work in this area covers multiple sectors including in education, health, mental health, criminal justice, employment, sport and governance.

This submission concerns itself with the needs of Indigenous people who are hard-of-hearing and/or have auditory processing problems. Those who are hard-of-hearing are people with a mild to moderate level of hearing loss. It does not seek to address the issues of the deaf Indigenous community - those who have a severe to profound level of hearing loss. Between 40 to 70 per cent of Indigenous people are hard-of-hearing compared with 20 per cent of non-Indigenous people.

> "Patterns and rates of OM and hearing loss present differently in Indigenous and non-Indigenous people, resulting in more serious consequences and necessitating different support and services for the Indigenous population." (Burrow, Galloway & Weissofner, 2009, p.2)

This singular profile and greater prevalence of Indigenous hearing loss necessitates a different and more substantial response by many Australian institutions and professional groups.

Firstly, since mild to moderate levels of hearing loss affect the majority of the population in many Indigenous communities, Indigenous people with hearing loss cannot be considered as only a 'special' group or this being only a 'disability' issue. Delivering accessible services to Indigenous people involves engaging with the communication issues that result from widespread Indigenous hearing loss. This is as central and pervasive issue in a similar way that culture is in providing services to Indigenous people.

Secondly, the greater prevalence of Indigenous people with hearing loss means that there are often significant group effects as a result of the hearing loss. When a critical mass of individuals in a group has a hearing loss there is an impact on all people in that group. Howard (1991) found that in classrooms where a significant proportion of students had a hearing loss the educational opportunities of students with no hearing loss in that class were diminished because of the demands on teacher time to provide individualised support to students with hearing loss and/or manage their disruptive behaviour.

Thirdly, hearing loss among Indigenous people is often compounded by concurrent auditory processing problems. This is because childhood middle ear disease that is the major contributing factor to the higher prevalence of hearing loss, also contributes to a higher prevalence of auditory processing problems.

CONDUCTIVE HEARING LOSS, OTITIS MEDIA AND 'LISTENING PROBLEMS'

Conductive Hearing Loss is hearing loss caused by problems that affect the transmission of sound impulses before they enter the inner ear. The term refers to the way sound is transmitted by mechanical conduction through the vibration of the eardrum (tympanic membrane), along the small bones in the middle ear, and then through the pressurised air in the middle ear. Conductive Hearing Loss among children is most often the result of infection in the middle ear – otitis media.

The infection causes a build up of fluid in the middle ear. The pressure exerted by this fluid can build up to the point where the eardrum bursts, or perforates. The fluid build up and eardrum perforations inhibit the transmission or conduction of sound through the ear. In most developed communities otitis media is a common but short-term childhood illness that is resolved by the time children begin school (Bluestone, 1998). However, in communities where children grow up in overcrowded housing, have poor nutrition and limited access to health care, middle ear disease is more prevalent and more severe (Couzos, Metcalf & Murray, 2001). Children from these communities often experience mild to moderate fluctuating Conductive Hearing Loss during their school years.

Indigenous Australians, Canadians and Americans (WHO, 1996), and Pacific Island and Maori children in New Zealand (Greville, 2001) have a known higher prevalence of middle ear disease and associated Conductive Hearing Loss than other population groups in those countries. It has been estimated that Indigenous children in Australia experience middle ear disease and related hearing loss throughout their childhood for an average of two and a half years, while the average for children in the mainstream Australian community is just three months (Couzos et al., 2001).

Childhood middle ear disease also contributes to a secondary condition - problems with the processing of auditory information. The persistent partial sensory deprivation that results from Conductive Hearing Loss associated with middle ear disease can inhibit the development of the neurological abilities needed to process sounds (Hogan & Moore, 2003).

This can lead to an ongoing auditory processing problem, which is sometimes referred to as a *central auditory processing disorder*. While about 10 per cent of people in the general community are affected by auditory processing problems, one Australian study found that 38 per cent of a group of Indigenous secondary students showed signs of auditory processing problems (Yonovitz & Yonovitz, 2000).

'Listening problems' are especially evident in noisy situations and are related to a combination of Conductive Hearing Loss and auditory processing problems, both of which are caused by past or current middle ear disease.

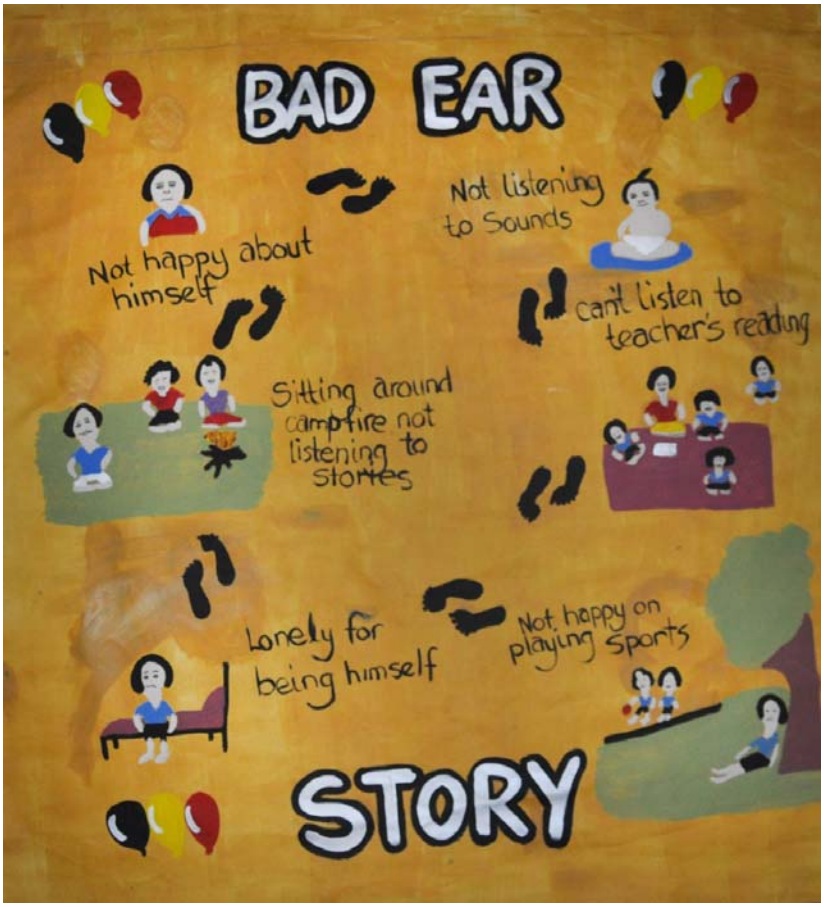
Conductive Hearing Loss is widespread among Indigenous adults as well as among Indigenous children. While intermittent Conductive Hearing Loss is most common among children, many Indigenous adults have some degree of ongoing Conductive Hearing Loss as a result of significant uncorrected damage to the middle ear caused by repeated infections

during childhood. For remote Indigenous communities, studies have found 50 percent of Indigenous tertiary students (Lay, 1990) and 60 per cent of a group of Indigenous workers have some degree of hearing loss (Howard, 2007a).

The functional listening problems of adults with early onset hearing loss will often be different and greater than those of adults with a similar level of late onset, noise induced hearing loss. This is because people affected by childhood onset hearing loss are more likely to be affected by auditory processing problems, and limited language development. They may also experience social difficulties in some situations.

Also when hearing loss begins in adulthood people have not experienced the same persistent childhood psycho-social experiences related to listening problems. Children with listening problems often feel socially excluded in groups, they often feel they're not as smart as other children and experience anxiety in many situations. These experiences can diminish confidence, increase defensiveness and prompt avoidance as a coping strategy.

When considering the functional listening difficulties associated with hearing loss, it is important to consider not only the severity of the hearing loss, but also how long the person has experienced hearing loss. When someone has experienced listening problems from an early age they are also likely to have been blamed by others or themselves for a range of communication, learning and performance difficulties. This often results in people, especially children and adolescents, being reluctant to accept anything that sounds like a further 'problem' or 'deficit' they have.



This painting by Valda Gaykamunga commissioned as part of a program helps Indigenous people become more aware of the outcomes of hearing loss.

Currently in addressing the needs of the hard-of-hearing, Australian institutions and professions have mainly developed services to address the needs of non-Indigenous Australians. Their clients are mostly older people who have late onset, noise induced hearing loss. Thus, the professional knowledge, skills, services, equipment and the focus of existing advocacy groups is mainly on the needs of this group.

A dramatically different and wider response from all Australian services is required to meet the needs of Indigenous people who are hard-of-hearing. This response needs to consider access to all types of services, participation in education and health services, participation in training and employment, involvement in the criminal justice system and mental health services.

IMPLICATIONS OF HEARING LOSS FOR INDIGENOUS PEOPLE

Research in the area has mostly been restricted to studies of the health aspects of ear disease among Aboriginal peoples (Couzos et al., 2001). However, there is also a small body of research and informed speculation on the effects of mainly Conductive Hearing Loss on Indigenous people in various sectors. This is described in the following sections.

1. Education
2. Access to Health Services
3. Mental Health
4. Housing
5. Families
6. Criminal Justice
7. Sport
8. Employment
9. Governance

1. Education

Education is the one sector that has paid most attention to the needs of Indigenous children with hearing loss. However, this attention has mainly been in the primary education. Secondary and tertiary education remains largely unaware of the issue of widespread hearing loss among Indigenous students. In the primary sector there have been difficulties in addressing the needs of the many Indigenous children with hearing loss using the 'special education model' of deaf education.

Classroom cultural context and hearing loss

In Australia, most Indigenous children are taught in standard Australian English by a non-Indigenous teacher. In this setting certain factors appear to compound the difficulties associated with hearing loss for Indigenous children.

- They face culturally unfamiliar and highly verbal teaching styles that require students to learn from listening to teachers and peers in an artificial classroom environment.
- Their classrooms are often noisy and seldom have adequate acoustics for Indigenous children with hearing loss.

The standard classroom approach to teaching and learning differs markedly from the traditional styles of education found in many Indigenous cultures, where learning occurs in small groups or 'one-to-one' and in real life contexts (Harris, 1980; Erickson & Mohatt, 1981). These more informal styles of education have many advantages for children with mild to moderate hearing loss.

- Firstly, real life contexts provide children with multi-sensory learning cues - they can observe tasks as they are demonstrated, so they do not have to rely on mainly spoken explanations.

- Secondly, the levels of background noise in one-to-one or small group instruction in real life settings are often lower than they are in classrooms.

Moreover, it is easier for children to understand someone who is known, speaking a familiar language, and who is able to talk about topics within the context of a familiar cultural framework. These familiar supports for communication and learning become critical when hearing loss reduces the information that is otherwise available from listening.

The evidence from regional and remote context suggests that if Indigenous students are taught in the language with which they are most familiar, in a wholly Indigenous class group, by a teacher from the same cultural group, the risk of the adverse communication and social outcomes for the children with hearing loss appears to be minimized (Lowell, 1994; Massie, 1999; Howard, 2004).

When teachers are from their own culture, children can learn within a framework of cultural and linguistic 'familiarity' that makes it easier for them to understand what is said. 'Familiarity' with the person, language and culture helps children to 'fill in the gaps' that result from diminished auditory input. Without such non-auditory supports and aids to understanding, Indigenous people with hearing loss (adults as well as children) can find speech difficult to comprehend. When they do this can in turn lead to fear of being 'shamed' - because they have not understood - and the resulting anxiety can compound the difficulties with understanding.

In intercultural classroom settings[1] Australian Indigenous students with hearing loss have been found to participate less than other students in the highly verbal Australian teaching processes. Studies have shown that they contribute little to class discussions and are less likely to answer questions. Often they are also the students who are most disruptive in class (Howard, 2004); and they tend to be less academically successful at school (Yonovitz & Yonovitz, 2000). In part, this is because persistent Hearing loss makes it more difficult for the affected Indigenous children to acquire language skills, especially when learning English as a second or third language (Jacobs, 1988; Yonovitz & Yonovitz, 2000; Howard, 2007a). However, their classroom and language based learning difficulties are also related to aspects of the classroom environment.

Classroom based research points to a number of mediating factors that influence the extent to which adverse communication and social outcomes result from hearing loss among Indigenous children (Howard, 2004, 2006a). These factors are:

- identification of children with hearing loss
- the cultural context of the classroom,
- the teachers' perceptions of, and responses to the behaviour of Indigenous children with Conductive Hearing Loss, and
- the levels of background noise in schools.

[1] Classes of Indigenous students taught by a non-Indigenous teacher who speaks standard Australian English.

Contrasting cases: The importance of early identification

At a workshop with Indigenous tertiary students on hearing loss two students publicly volunteered their listening problems.

One young man did so because he had just heard about the types of difficulties people with listening problems typically have. A listening survey he had completed supported this, and he discovered his listening problems for the first time during the workshop. He discussed how he had long thought his problems stemmed from an inability to concentrate because he was 'dumb'. He was often shouted at, both at home and at school, for not listening. He described limited family or school support and a long history of problems with anxiety and interpersonal conflict. At the age of 30 he experienced high levels of stress and anxiety, and suffered from what was thought to be stress-related high blood pressure.

The second student had suffered from ear-disease and related Conductive Hearing Loss, but this was identified and treated early. She described the ongoing frustrations she experienced when trying to listen in noisy environments, but also the high level of family and school support she received. She said she was rarely shouted at home or school for not listening, because others knew of her hearing loss. Her awareness of her hearing problems from a young age had helped her keep belief in her own abilities even when she had trouble understanding what people said. She described experiencing some stress, but it was manageable because she knew that her difficulties were related to her listening problems rather than her ability.

Early identification of listening problems, when combined with informed support at home, school, and work, can protect people from the adverse psycho-social consequences of listening problems.

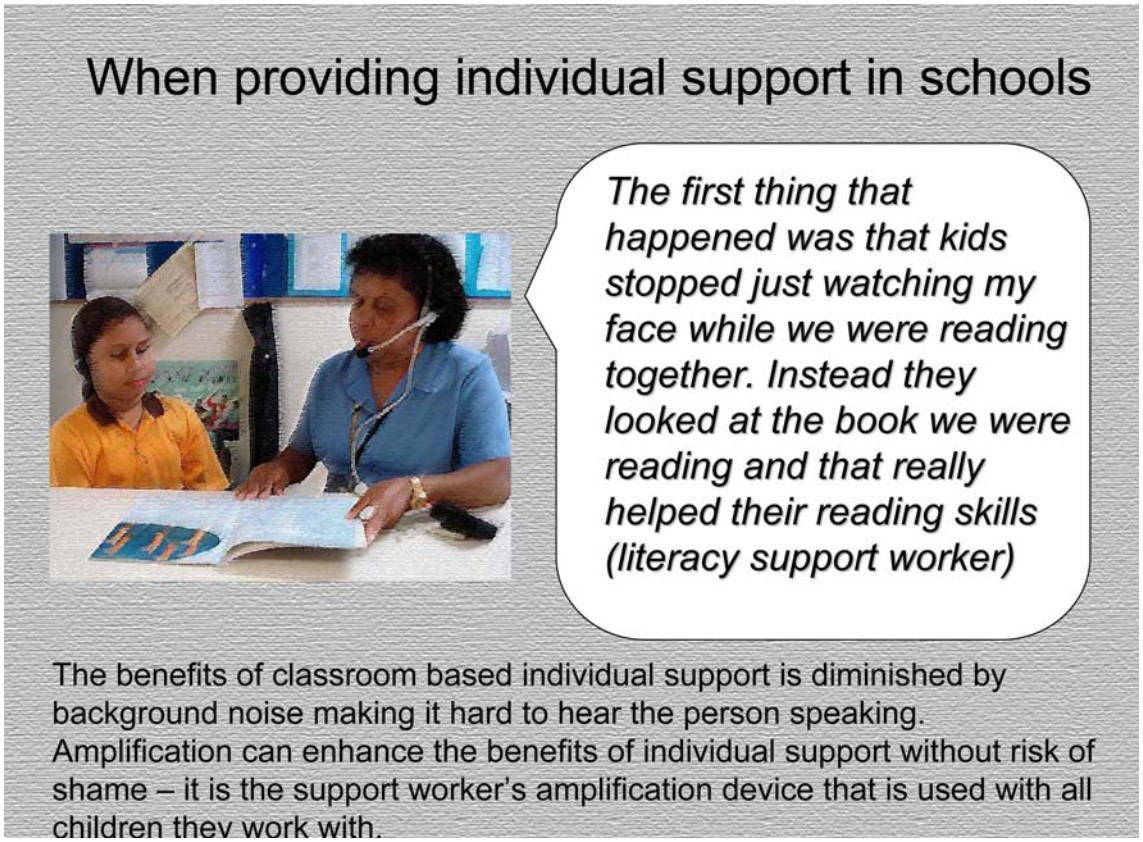
The limited attention given during teacher training regarding Indigenous hearing loss is a national problem. This limited attention to the communication issues of people with Conductive Hearing Loss during training also applies, with a few rare exceptions, to training of audiologists and teachers of the deaf.

Sound field amplification has been demonstrated to assist children with Conductive Hearing Loss in classrooms (Wilson et al., 2002). It is a tragic irony that current policy will provide some children with hearing loss with a hearing aid that they often do not wish to use in class but does not fund sound field systems that will unobtrusively benefit that child and all others in the class.

Moreover currently amplification used in schools is provided to the whole class through sound field systems where speakers amplify the teacher's voice to everyone; or individual amplification systems where the teacher's voice is amplified to an individual student via a

bone conductor, a behind the ear hearing aid and/or FM system. Amplification is not available for use during one-to-one and small group classroom instruction. Many Indigenous adults with Conductive Hearing Loss (CHL) described that the individualised help that they received (both at and outside school) as being of greatest assistance to them. This type of help is usually provided by teaching assistants, specialist teachers and classroom teachers in class - often in the presence of much background noise.

Providing amplification during one-to-one help enables maximum benefits to be derived from this support. This kind of amplification may be especially beneficial for Indigenous children for whom English is their second language. Sounds that are most commonly hardest to hear when a child has CHL are often not present in Indigenous languages so, an Indigenous child with CHL may thus struggle to learn English. Using individualised amplification, especially during phonics training and other small group literacy work carried out in noisy classrooms can benefit students with CHL. This device can be used in class with a small group if used in conjunction with a 'listening post'. When combined with the individual amplification device these listening posts can be used to create small group instruction where children can clearly hear what is said even in noisy classrooms.



In 1999 the Queensland education department conducted a review that concluded:

> *"At the school/district level, difficulty is experienced with the development of a more appropriate service delivery model (for children with otitis media and Conductive Hearing Loss) because:*

- *many personnel in leadership positions (in schools and district offices) have very limited information about CHL:OM (Conductive Hearing Loss:Otitis Media) and its effects on learning beyond the awareness level*

- *schools have not fully recognised their role in, and responsibility for, the development of programs*

- *personnel in teaching positions have not had access to sufficiently detailed information on the effect of CHL:OM on learning, beyond the awareness level*

- *there are no guidelines that document best practice and support school and district personnel to achieve improved school based management of CHL:OM*

- *strong partnerships between education, community and health services that address CHL:OM issues do not always exist.*

At the system level, CHL:OM, as a factor influencing achievement in Aboriginal and Torres Strait Islander students, is not always recognised. There has not always been the support necessary to improve outcomes for students with CHL:OM, specifically:

- *co-ordinated school-based health services fluctuate*

- *there appears to be a lack of accountability measures that ensure school based management incorporates the use of specialist support services and school based programs to achieve the best possible outcomes*

- *there are no requirements for teachers employed in Aboriginal and Torres Strait Islander schools to be informed about CHL:OM, its effects on learning and the kind of support required to ensure improved outcomes*

- *the students with disabilities: Allocative staffing model does not recognise the disproportionately large numbers of students with CHL:OM in some districts."* (Queensland Department of Education, 1999).

The situation described in Queensland in 1999 remains typical for most of Australia. Reading between the lines is a story of pervasive, chronic institutional neglect. This report itself is a rare exception to the usual silence about this reality that is the norm in other jurisdictions.

In some jurisdictions the neglect involves an erratic commitment to maintaining programs. In 2009 in the Northern Territory education department effectively dismantled the Conductive Hearing Loss program when the number of dedicated advisory teachers for Conductive Hearing Loss was cut from 5 to 0 without any public announcement. This was after the Commonwealth Northern Territory Intervention had highlighted the high number of Indigenous children with chronic ear disease and hearing loss in the Northern Territory.

The following illustrations from Howard (1991) highlight a common classroom reality that results when education systems ignore and neglect this issue.

Only a minority of students were able to learn effectivly from 'teacher talk'. These were mostly students who did not have a hearing loss and were regular school attenders.

The demands on teacher time of students with hearing loss for, either 'one to one help' or to manage their disruptive behaviour meant that often the more able students did not have their educational needs met.

Recommendations

1.1 Regular screening of Indigenous children for hearing loss

1.2 Pre service and post service teacher training about education issues around Conductive Hearing Loss, especially among Indigenous children.

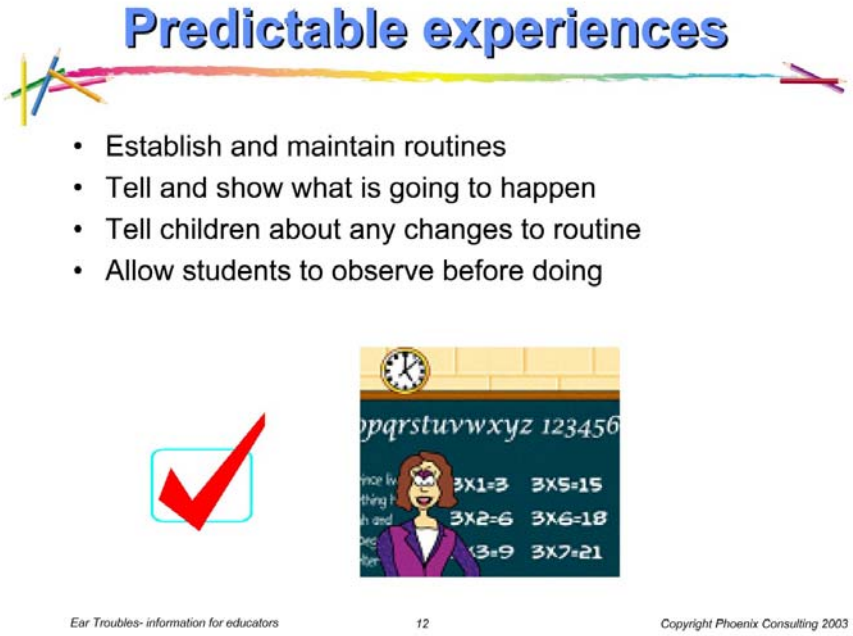
1.3 The proportion of children with hearing loss included in formulas used to determine resourcing levels - especially class sizes.

1.4 Classroom and school acoustics given priority when high proportion of students in a school has fluctuating hearing loss.

1.5 Use of amplification in schools – especially sound field systems

1.6 Research into student needs and best practice.

Below is an example from training materials for teachers.



2. Access to Health services

Research with non-Indigenous people has found that adult hearing loss is associated with a greater risk of chronic diseases, including: diabetes, elevated blood pressure, heart attack as well as having higher sickness impact profiles (Barnett, 2002).

Adult hearing loss is also associated with a greater risk of mental health problems. These include: psychiatric disorders, affective mood disorders, poorer social relations as well as higher psycho-social impact profiles of mental health problems.

There are a number of ways that hearing loss contributes to people having poorer health. Research with non-Indigenous people demonstrates that people with hearing loss have less health knowledge than other clients and those who come from a minority culture have the

lowest level of health knowledge. There is also evidence that people with hearing loss have more difficulties in accessing health services and experience more difficulties communicating with health practitioners.

Frustration, anxiety and avoidance

People with hearing loss often experience more frustration and anxiety than others in the same situation. Further, certain communication contexts that are common in Indigenous health act to compound communication difficulties. People with hearing loss experience more difficulties understanding what is said or asked when the person talking, the content of conversation or language spoken is unfamiliar. In these situations many Indigenous clients with hearing loss are likely to maintain a confused silence, give erratic answers or simply avoid health consultations.

Northern Territory DVD information

A DVD has been developed by the Northern Territory Health Department. This DVD walks through children's involvement in ear surgery. This type of information resource is important because a frequent obstacle to Indigenous people with hearing loss accessing available services is anxiety. Children and adults with hearing loss often become anxious about participation in unfamiliar processes.

One way of coping with their anxiety is to avoid involvement in unfamiliar processes even ones that can help to resolve the hearing loss that is the catalyst for the anxiety. Informing prospective patients of what will happen during specialist procedures through audio visual means can improve both rates of participation in surgery as well as after treatment compliance.

This issue was outlined in a recent presentation to the Kalgoorlie Ear Health conference by Damien Howard titled 'Indigenous hearing loss, anxiety and access to health and education services'. The video developed by NT Health is the first health information resource that addresses this largely unrecognised link between hearing loss, anxiety and non-attendance/non-compliance of Indigenous patients.

Indigenous clients' health consultations are very likely to be with unfamiliar people because of the high turnover of non-Indigenous health practitioners and reducing numbers of Indigenous Health Workers. The content of communication in health consultations is also likely to be unfamiliar, being based around culturally unfamiliar Western health concepts. English, or the kind of English spoken by non-Indigenous health practitioners, is also not the language with which the majority of Indigenous clients are most familiar.

While there is a general awareness that cultural and linguistic factors are an obstacle to communication in Indigenous health, there is little awareness that widespread and usually unidentified hearing loss among Indigenous people is also an important obstacle to communication. There is also little awareness that hearing loss compounds the effects of cultural and linguistic differences. The Indigenous clients who are most likely to have a hearing loss are those who speak the least English and who are most shy with non-Indigenous practitioners.

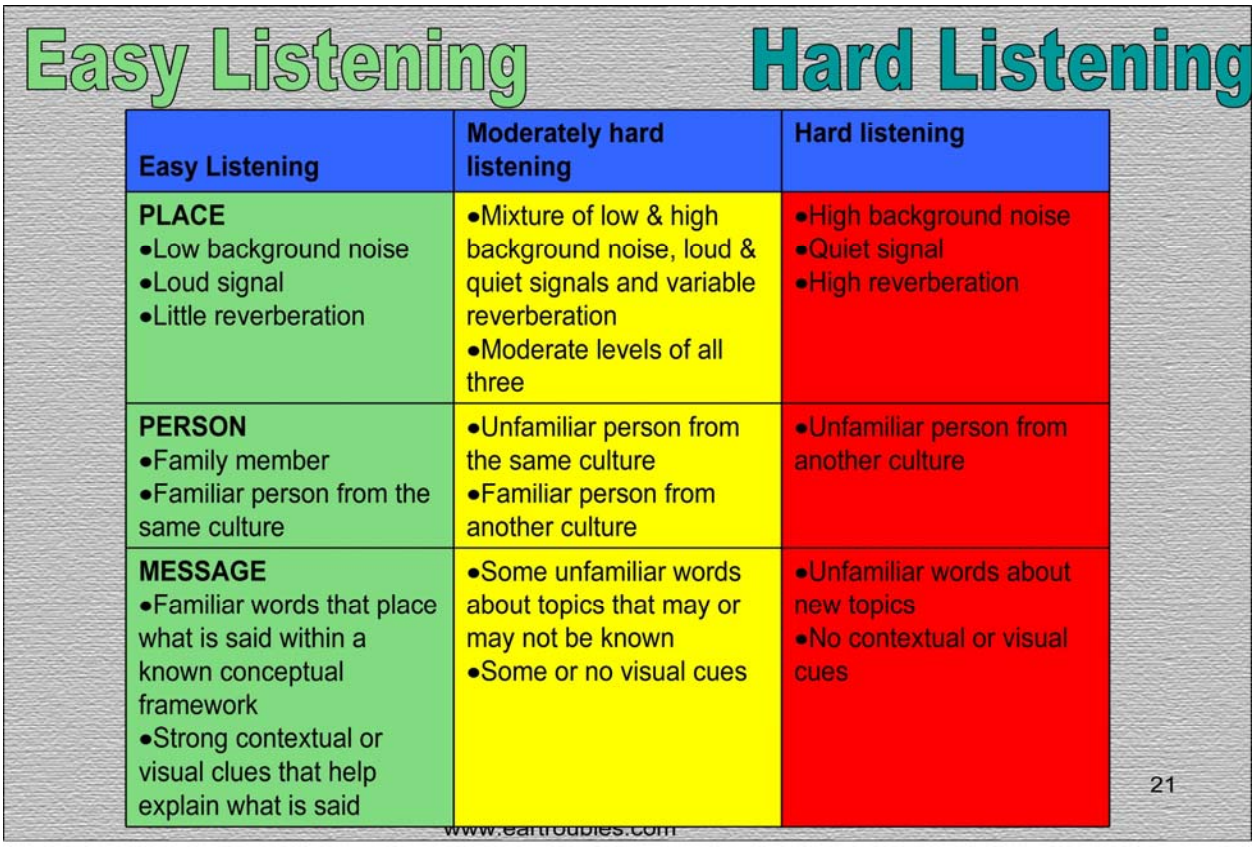
Another important factor that magnifies the effects of hearing loss on communication is the level of background noise. A level of background noise that is not a problem for someone with no hearing loss can create significant problems for someone with hearing loss. This means that clients with hearing loss have particular difficulties with communication in noisy reception areas, consulting rooms and hospital wards.

The situations where Indigenous clients having a hearing loss will have the greatest impact on health outcomes in the following situations:

- when there are new nurses or doctors, especially when practitioners are unfamiliar communicating with Indigenous clients;
- when there are no Indigenous Health Workers available;
- when there is background noise during communication;
- when clients are referred for specialist treatment;
- when treatment outcomes rely on effective communication. For example in chronic disease management or maternal and child health.
- when communication takes place with any combination of unfamiliar people, unfamiliar content or in the presence of background noise.

Easy Listening

The following table gives a guide as to how to make listening easier for Indigenous people with hearing loss.



Sensory Discrimination

The senses are not treated equitably by Medicare and private health funds. The following table outlines benefits for optometry and audiology services.

	Optometry	Audiology
Medicare	Consultations are covered and the optometrist usually bulk bills for the initial consult. No cover for glasses.	No cover for consultations. No cover for hearing aids.
Private health funds	Optometry services are usually covered as a separate item.	No cover for consultations. Some levels of health funds allow audiology services as 'extras'.

Recommendations

There is a need for:

2.1 Education for practitioners working with Indigenous clients.

2.2 Use of amplification during consultations – see illustration below.

2.3 Providing proactive information to limit the use of avoidance strategies by Indigenous clients.

2.4 Hearing assessments and audiological services being more accessible to all Indigenous people.

Using amplification with Koori clients

"The compliance of patients improved and the interaction improved. People were taking medications and getting to appointments I made for them with specialists, so that would have helped improve health outcomes. Clients also asked for more information and consultations became longer. People's participation in their own health management improved. It also decreased the likelihood of me stereotyping the client. I no longer thought some clients limited communication was about cultural matters – involving women or men's business, which was untrue."

Dr Hung The Nguyen speaking about using an amplification device with some of his Koori clients in Melbourne

3. Mental health

Indigenous people experience mental health problems such as depression at a very high rate, compared to non-Indigenous people, that rates of self-harm and suicide are higher as are substance abuse, domestic violence, child abuse. (Swann & Raphael, 1995) Trauma and Grief were are often overwhelming problems. These are related to past history of loss and traumatisation and current frequent losses with excess mortality in family and kinship networks. The greater prevalence of Mental Health problems is concurrent with a higher prevalence of hearing loss among Indigenous people

There is a known association between mental health problems and mild to moderate hearing loss in the non-Indigenous community (Kvam, Loeb & Tambs, 2007).

There is evidence that Indigenous people with mental health problems are more likely to have a hearing loss (Howard, 2009). However, this is not a simple cause-effect outcome. There are a number of other mitigating and/or exacerbating factors involved. For example crowded housing exacerbates the adverse social effects of hearing loss and social support mitigates the adverse effects of hearing loss on mental health.

> An Indigenous secondary school student with auditory processing problems was regularly suspended from school. Most of the suspensions took place when his mother was away on work trips. There was some suspicion about the behaviour of his stepfather, who cared for him in his mother's absence. When he was asked about that the student said:
>
> *"No, I get on OK with my stepfather, but my mum and I are really close. When I'm feeling really stressed and worried and I come home from school at the end of the day, I talk to my mum and she talks about the things I'm feeling stressed and upset about. That helps me work out what to do, and I go back to school the next day and I'm OK. But when my mum's not there I just go home and just think about what happened at school, stew about it and work myself up. Then I go back to school the next day and I might hit the kid that upset me."* (Indigenous student with listening problems)
>
> The emotional support and help in solving social problems this student received from his mother was crucial for his ability to cope with the interpersonal problems he was experiencing at school.

The prevention of mental health problems can be assisted by helping families deal with the impact that hearing loss has on communication and interpersonal relations.

Effective communication with people with hearing loss is also a critical component of providing interventions that address mental health problems that are contributed to by hearing loss. Using assistive listening devices during counselling can help with some clients.

A psychologist described how using an amplification device improved communication with an Indigenous client with hearing loss.

"It was much easier to communicate using the amplification device. Usually our conversations were stilted and I was aware of the need to constantly check her understanding of what I had said. She seemed to be able communicate and stay with the conversation in a more normal way using the device. Also I feel her expressive language improved. Often during sessions she would mumble and I would have to ask her to repeat things. But using the amplification device her articulation improved. It was less effort for us both to converse". Fiona Leibrick Psychologist.

Using amplification helped both the client and the psychologist hear each other more clearly. Amplification meant the client heard the counsellor more clearly. What the client said was also heard more clearly because she heard her own voice more clearly which enabled her to adjust her volume and self correct her articulation.

Practitioners can achieve better outcomes for Indigenous clients with hearing loss is they understand how hearing loss has contributed to client stress, anxiety, negative thinking, communications difficulties, interpersonal problems as how to help the client minimise these adverse outcomes of hearing loss.

> *"Hearing loss affects both the individual who has it and those with whom he or she interacts. If the listener is hard of hearing and does not understand what is being said, the person speaking will also experience a communication problem. In the same way, speakers, as well as listeners who are hard of hearing, share responsibility for preventing or reducing communication problems related to hearing loss… (listeners) cannot prevent or resolve communication problems by themselves; they often need the co-operation of those with whom they communicate. People with hearing loss (also) benefit greatly from identifying and eliminating their non-productive reactions to communication difficulties, and from replacing them with more constructive responses."*(Trychin & Boone, 1987)

Steven Torres Carne talks about the link between hearing loss and anxiety at the web address below.

http://www.hstac.com.au/HearThis/families/index.html

Recommendations

There is a need for:

- 3.1 Formal research to understand the contribution of hearing loss to Indigenous mental health issues as well as to develop best practice strategies.
- 3.2 Raising awareness among mental health professionals of the presence and impact of hearing loss among clients.
- 3.3 For practitioners to screen for hearing loss among Indigenous clients – for example using the Phoenix Listening Survey.
- 3.4 Incorporate into treatment intervention strategies that can help to address the contribution that hearing loss can make to mental health problems.

4. Housing

Crowded poor quality housing contributes to higher levels of middle ear disease among Indigenous children (Couzos et al., 2001). The combination of hearing loss and crowded housing can then result in communication problems that exacerbated mental health problems and contribute to family violence. There are of course many other factors involved in Indigenous social problems. However, the role of hearing loss, especially in difficult listening environments play in social problems deserves greater consideration that it has received to date. The following are short anecdotes that illustrate the contribution of hearing loss to social problems.

> *One woman with hearing loss accused her husband of 'mumbling' when she could not understand him at a time when there was lots of noise at home because of many visitors. She got angry with him and threw something at him, in response to which he retaliated and hit her, which led to him being arrested and jailed.*

> *A young husband with hearing loss described the birth of a new baby made it harder for him to hear. Communication demands on him were greater because his wife wanted more support from him to look after their new baby, but she got angry when he had trouble understanding her above the babies crying. On one occasion he had to go to hospital after she got angry and hit him after she asked him to get something from the shop and he misunderstood and bought the wrong thing.*

A grandmother with hearing loss described that when her family came together to socialise she became upset that she could not hear them properly because of the combination of her hearing loss and the high noise levels from everyone talking.

A woman with hearing loss who was depressed described how she had recently been thinking about hurting herself. When asked when she started thinking this way, she said it was after lots of visitors came to stay. She said it was really hard when other people did not help out and she became frustrated and angry trying to talk to people at home with increased noise levels.

Recommendations

4.1 Research needs to be carried out into the how widespread Indigenous hearing loss may interact with overcrowded poor quality housing in ways that contribute to issues such as domestic violence and mental health problems.

4.2 Housing programs for Indigenous communities should pay particular attention to the acoustics of the housing being built.

5. Families

The implications of hearing loss for Indigenous families are more than about crowded housing. The widespread hearing loss among Indigenous children, especially when it is not identified, has important implications for Indigenous families. Children are likely to be seen as naughty and defiant and be excluded from family activities. The demands of children with Hearing loss also impact on family life.

One mother of several children with hearing loss described that the demands of these children made it difficult for her to parent effectively. It made it hard to get to health appointments for herself and her children, to get kids to school and to fulfil her work obligations.

This is an area where there has been almost no research carried out. The following information is from a small qualitative study. (Howard & Hampton, 2006)

Children who have difficulties with communication because of hearing loss are often punished physically.

> *'Half the kids get floggings because they* (the parents) *think they're* (the children) *ignoring them. I see parents giving kids with hearing loss a flogging when they* (the children) *have not understood; I see that all the time, everywhere… I think half the kids* (with hearing loss) *get hidings sometimes.'* (Aboriginal Health Worker)

> *'Sometimes it is they* (the children) *don't show any respect to old people and they get really upset with them and they get hidings from old people.'* (Aboriginal Health Worker)

Children with hearing loss were also observed to 'bully' their parents.

> *'They are cheeky…you see a kid* (who has middle ear disease*) throwing rocks at Mum and swearing and demanding something, and usually most times they will give it to them to shut them up.'* (Aboriginal Health Worker)

> *'I have noticed that it is the kids with chronic ear problems who are the ones you sometimes see hitting their family when they are in the waiting room.'* (Remote Area Nurse)

Other people reported that family members had limited contact with others because of communication and behaviour problems of their children with hearing loss.

> *'My parents say that they can't handle them* (the children) *so they don't want to baby sit them because they* (the children) *won't listen to them. It is hard because there is no-one else I can leave them with.'* (Mother)

This parent faced her children's problems related to hearing loss by herself. Other parents described how challenging this could be.

A mother, who has hearing loss, described the challenges she faced when communicating with her son, who also has hearing loss.

> *'With my son, when I used to get angry, if I get angry with him, he's probably a bit shitty with me and doesn't want to listen…my son used to be very strong, you know - probably not listening to what I'm saying but still trying to have his say, keep on going and not listening. It used to be hard to make him understand. It took me a while. He used to run off, take off and don't listen. Keep doing it, keep doing it. It was really hard.'* (Mother)

These comments suggest a process whereby her child's hearing related social problems led to this parent blaming herself and withdrawing from her child. This type of response, also suggested in research with non-Indigenous parents (Haggard & Hughes, 1991), is likely to lead to the child's social problems becoming even greater.

Many Indigenous families appear caught in a cycle involving increasing social problems among children with hearing loss and decreasing social and emotional well being among their carers. Breaking this cycle involves identifying children's hearing loss and informing families of the predictable social outcomes of hearing loss and how they can be best managed.

For a child, family relationships form the basis of social and emotional well being and long term social development. The child's web of social relationships is critical for individual, family and community well being (Eckersley, 2004). However, it is clear that the listening/hearing problems described above have the capacity to significantly disrupt family life, impact on community functioning and damage a child's social and emotional well-being.

Elaine Cox talks about the impact of her hearing loss on her family life at the below address

http://www.hstac.com.au/HearThis/families/recognisehearingloss.html

It is likely that this huge prevalence of hearing loss contributes to many individual, family and community problems. Take for example petrol sniffing; the NT coroners report on the death of an Indigenous child who had been sniffing petrol for many years commented

> *"Health worker notes from his Mutitjulu file and his Alice Springs file record that he was very quiet, uncommunicative and difficult to get a history from. Lack of English, and symptoms from his chronic ear infections were no doubt contributors to this."* (Cavanagh, 2005).

This child's difficulties in communication probably contributed to the social and emotional problems associated with petrol sniffing as well as limiting his access to health care. Anne Lowell when researching the educational effects of hearing loss at Galawinku noted that many children with hearing loss were among the group of children habitually sniffing petrol (Lowell, 1994).

Samson and Delilah
did Samson have a hearing loss?

Hearing loss is widespread in Indigenous communities because poor living conditions of the type portrayed in the much acclaimed movie 'Samson and Delilah'. There are clear indications that Samson had a hearing loss. At one stage he covers each of his ears and shows that he hears differently out of each ear. Later when awful things happen behind him out on a noisy street he is not aware of them. Many reviewers have noted there is little dialogue between the main actors. Samson only says one word and the way he says that word shows he has speech problems. Many Indigenous children who have had hearing problems growing up also have speech problems.

The social problems Samson has are typical of many Indigenous youth with hearing loss. He experiences social rejection which appears to contribute to an antisocial outburst. Research has suggested that hearing loss may be common among children who sniff petrol, as does Sampson. His difficulties also create problems for his family and community.

When Samson leaves his home community and goes to Alice Springs he is highly dependent on Delilah. It is Delilah who acts to manage communication with authorities and people in their home community. Indigenous people with hearing loss frequently rely on family members or partners to help with communication with unfamiliar non-Indigenous people.

There are many things that contribute to the overall disadvantage experienced by Indigenous people and hearing loss is one of these. Most people seeing the movie would not think that Samson may have had a hearing loss. It would seem for Samson, as in real life for so many Indigenous youth, hearing loss is an important but invisible factor in the story of their interpersonal and social problems.

Recommendations

5.1 There is a need for research in this area and programs to support families as they deal with the family effects of hearing loss as well as for school and community based programs for the many Indigenous children and adults who experience hearing loss.

5.2 The staff of programs that seek to address such areas of substance abuse or family violence should be trained in effective communication strategies for people with hearing loss.

6. Criminal Justice

There is evidence that a higher proportion of Indigenous prison inmates have some degree of hearing loss when compared with the general incidence of Hearing loss in the total Indigenous population (Bowers, 1986; Murray & La Page, 2004). This suggests that:

> ''*Involvement in the criminal justice system may be the end product of a cumulative link, whereby hearing-related social problems contribute to low educational standards, unemployment, alcohol and substance abuse, these being the more obvious antecedents of contact with the criminal justice system.'* (Howard et al., 1991, p 9).

Difficulties with inter-cultural communication processes, the perceptions and responses of non-Indigenous staff and background noise levels, in combination with Conductive Hearing Loss, can and do lead to significant communication problems.

Linguistic and cultural differences are frequently presumed to be the reason why an Indigenous witness may misinterpret a question, give an inexplicable answer, remain silent in response to a question or ask for a question to be repeated. The potential contribution of hearing loss to a break down of communication is generally not considered. However, it is probable that the distinctive demeanor of many Indigenous people in court is related to their hearing loss. Where this is the case there is a very real danger that the courtroom demeanour of Indigenous people (not answering questions, avoiding eye contact, turning away from people who try to communicate with them) may be being interpreted as indicative of guilt, defiance or contempt (Howard, 2006c).

Court communication processes are largely an artifact of 'Western' culture. The social processes are structured and highly formal and the language used is often obscure, even to native English speakers. Yet Indigenous people can be disadvantaged if they do not participate fully in court processes that involve archaic examples of 'Western' social etiquette and a specialised English vocabulary. An anthropologist made the following comment after observing Indigenous defendants in court proceedings:

> *'(The) most frequent response is to withdraw from the situation, mentally, emotionally and visually. One magistrate in a country town complained to me that "Aborigines in the dock are always gazing out of the window, or looking down and either ignoring questions or mumbling inaudible answers".'* (Howard et al., 1991, p 10)

The following anecdotes are indicative of ways in which communication elsewhere in the criminal justice system can also be adversely affected by Conductive Hearing Loss, with perverse consequences.

> *'A defendant with hearing loss was crash tackled when being transported from court when he did not obey a verbal order to stop, that he did not hear.'*
>
> *'After sentencing, a defendant with hearing loss was placed in an unfamiliar room to be told what his sentence meant. His usual lawyer was not available because of other*

commitments, so another unfamiliar lawyer tried to explain the sentence. However, the man became wild and 'trashed' the room when the new lawyer tried to explain the court outcome. He only calmed down when familiar staff from the detention centre arrived.'

'A long-term feud developed between a hearing impaired prisoner and another prisoner after a hearing related misunderstanding during a game of cricket in prison.' (Howard, 2006c, p 9)

There is strong evidence to suggest that some of the anti-social behaviour of Indigenous people is related to widespread hearing loss (Howard, 2004). Recent research (Richards, 2009) shows that police are more likely to arrest and refer to court young Indigenous people, compared with non-Indigenous youths. This may be seen as related to racial profiling and negative stereotypes of Indigenous people among police. It is highly probable, however, that the outcomes of police contact with Indigenous people are influenced by the influence of widespread hearing loss among Indigenous youth impacting on communication with police.

There is evidence of hearing loss having influencing Indigenous people's relationships with police in the comments of Steven Torres Carne at the following web address.

http://www.hstac.com.au/HearThis/media/videostevenmumble.html

Further, fair and just outcomes are more difficult within court processes not only because of the defendant's hearing loss but also because of the hearing loss among Indigenous witnesses (Howard, 2006c). There are also issues of management of Indigenous inmates in detention and rehabilitation opportunities.

Barry: A rehabilitation success story

Barry was in his forties and suffered from persistent middle ear disease in both ears which caused severe hearing loss which continued to as he got older. He also had a long history of involvement with the criminal justice system, had been to jail a number of times, and had a very negative relationship with police.

Police who had pulled Barry over in his car would tend to raise their voices when it was clear Barry had trouble understanding them. However, this often

provoked anger and aggression from Barry who felt they were shouting at him. On a number of occasions this resulted in his arrest.

Barry was often excluded from family conversations, sitting with family members but rarely included in the discussion. He had found it too stressful to join in CDEP ('work for the dole') activities, because of the communication difficulties he experienced in working in teams.

Barry had been trying to get a hearing-aid for 20 years without success. When his hearing loss was first identified as an adult, he was too young to qualify for a free hearing-aid and too poor to afford to buy one. When Barry finally became eligible to receive a free hearing-aid, the complex bureaucratic processes involved were a major obstacle, because it required literacy and phone communication skills that Barry did not have. Barry was given a personal amplification device while he waited hopefully for a hearing-aid, which a year later had yet to happen.

After Barry had used the relatively inexpensive hand held or 'pocket talker' amplification device for a month, he and his wife described the changes that the device had made in Barry's life.

- *He was generally much less stressed.*
- *He was able to participate in family discussions, and was now much more engaged in family life.*
- *He was able to establish a more positive relationship with local police, as he could now have a conversation with them.*
- *He was able to participate more easily in culturally important hunting and fishing activities because he could hear people when they called out in the bush.*

When Barry was finally fitted with hearing-aids he was a changed man. He found the hearing aid even better than the portable amplification device. He was successful in gaining a supervisory position in his workplace. He described how both he and his family experienced much less stress and frustration now he had a hearing-aid.

Recommendations

6.1 That police and others involved in the criminal justice system include communication training around recognising indications of hearing loss and how to minimise the communication breakdown that can result.

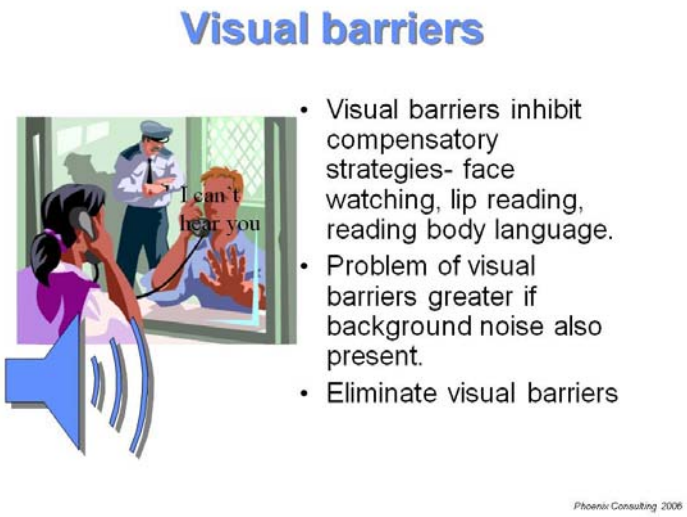
6.2 Criminal justice processes also consider the impact of hearing loss as important an issue as linguistic and cultural differences.

6.3 Communication issues in this area need to be researched. The best practice approaches will likely include the following.

- Hearing Screening of Indigenous people in custody.
- Use of amplification equipment by police, in court and in corrections facilities

- Consideration of acoustics and communication training at every stage of involvement in criminal justice system.
- Consideration of hearing rehabilitation as part of the rehabilitation process for Indigenous prisoners with hearing loss. There are anecdotal stories of people being fitted with hearing aids immediately changing their profile of antisocial behaviour that had contributed to constant involvement with the criminal justice system.

Example of training for criminal justice staff



7. Sport

Successful participation in school sport has important outcomes for Indigenous children and youth. The West Australian Aboriginal Child Health Survey found children who participate in sport, especially males, have better social and emotional well being than other Indigenous children (Zubrick et al., 2004). Indigenous children value themselves more positively when they play organized and competitive sport than in any other school activity (Kicket-Tucker 1999). Enjoying participation in sport was a reason given by many Indigenous children as why they liked to attend school (Howard, 2006a).

Anything that acts to limit participation in sport will deprive children and youth of the above mentioned positive outcomes. One factor that may significantly limit participation in school sport is children having a Conductive Hearing Loss.

Comments made by Indigenous boys with hearing loss when they were asked what they disliked about having a hearing loss referred to sport. They commonly said that not being able to hear people calling out to them during team sports was what most concerned them (Howard, 2006a). Further evidence of the negative effect of hearing loss on participation in sport was provided in a survey carried out at a Darwin primary school by a teacher.

While teaching at a Darwin primary school with a high proportion of Indigenous students a teacher (Len West) became interested in how hearing loss may impact on children's sports performance. Prior to all Indigenous students at the school being screened for hearing loss,

teachers were asked to fill in a questionnaire on their perception of students' sporting performance.

In one Darwin school where children's hearing was being tested, teachers were asked to rate student's sporting abilities. Forty five percent of the Aboriginal children in the school had a current hearing loss, a not uncommon situation. Those Aboriginal children with a current conductive hearing loss were half as likely to be judged as having above average sporting abilities as were Aboriginal children without a hearing loss.

Go to the below web address and listen to Elaine Cox describe how having a hearing loss impacted on her ability to play sport.

http://www.hstac.com.au/HearThis/media/videoelainesport.html

Listen to Steven Torres Carne talk about how his hearing loss impacted on his sporting career at the web address below.

http://www.youtube.com/user/eartroubles#p/u/3/FefPeh95yU8

There are several ways that hearing loss can influence children's sporting performance. Sports performance can be diminished by:

- general ill health related to middle ear disease;
- communication problems during training and games and/or;
- the effect that middle ear disease has on balance and co-ordination.

Some or all of these factors could contribute to diminished sporting performance for children who experience Conductive Hearing Loss from middle ear disease.

While the effects of Conductive Hearing Loss on school sport performance need to be investigated in greater depth there is enough evidence to support the need for training programs for teachers and coaches to minimise the adverse outcomes of hearing loss on participation in school sports.

Such training programs would need to alert teachers and coaches, firstly, to informal hearing screening games such as 'Blind Man's Simon Says' (Howard, 1993). Awareness of hearing loss can encourage early medical intervention and referral for formal hearing tests as well prompting greater care in communication with children with a current hearing loss.

Many negative social outcomes from hearing loss arise when people are unaware that a child has a loss, for example responses such as failing to respond to instructions may be seen incorrectly as defiance and reacted to accordingly with adverse results.

Secondly, those involved with children's sport should be aware of ways to communicate most effectively with children with hearing loss. The following are some suggestions of how to improve communication during coaching to benefit students with hearing loss.

Some suggestions for sports teachers and coaches

1. ***Get the attention of students before trying to speak***.

2. ***Speak slowly and clearly when giving instructions***. Focus on key words and repeat important information. Encourage children to ask for information to be repeated or clarified.

3. ***Try to minimise background noise when giving verbal instructions***. Be aware that children with hearing loss will have more difficulty hearing when it is noisy. Others may think someone with a hearing loss is ignoring instructions or requests during a noisy game when in fact they have not been able to clearly hear what was said.

4. ***Train through showing as well as talking***. Students will be more successful when they can supplement verbal instruction by observation.

5. ***Use modelling as part of training.*** Show what is expected as well as tell.

6. ***Use a buddy system*** where students, especially those with suspect hearing, are paired with another student who is more able to process verbal instruction.

7. ***Be aware of the amount of verbal instruction you are using.*** Students with hearing loss are likely to be disruptive because they may be unable to cope with high level of verbal communication. They may also have developed a teasing, confrontational social style that makes them unpopular with peers. Socially excluding students with hearing loss may only exacerbate problems and should be used as a last resort.

8. **Teasing and disruptive behaviour** by students with hearing loss can often be better managed by controlling levels of background noise and engaging students in activities where they can succeed.

9. ***Be aware that students with hearing loss are likely to be sensitive*** about being shamed by their hearing-related communication problems being evident to others. There are indications that hearing loss inhibits sports performance of many Indigenous children and athletes. One study showed that Indigenous children with hearing loss performed less well than their Indigenous peers who had normal hearing.

Recommendations

7.1 There is a need for formal research to understand the issues and develop best practice guidelines around Indigenous hearing loss and sport.

7.2 Based on this research programs to raise awareness and address this issue need to be developed. Such programs will involve training of coaches and others as well as support for participants in sport with a hearing loss.

8. Employment

Widespread hearing loss has important effects on Indigenous employment. One study (Howard, 2007a) found sixty per cent of the surveyed remote workers were found to have occupationally significant hearing loss. From the ratings of their supervisors, it became apparent that the remote workers with hearing/listening problems, in comparison with colleagues without these problems:

- had poorer overall work performance;
- were less proficient in oral English;
- had lower levels of literacy;
- had more difficulty following verbal instructions;
- were slower to learn on the job;
- were more often defensive if corrected; and
- were less able to work independently.

Moreover, remote workers with hearing/listening problems experienced high levels of frustration and anxiety, and to a lesser extent depression, because of the communicative difficulties they experience. Consequently, they tended to use avoidance as a coping strategy. Some of the trainees sought to avoid unfamiliar work, working independently of others, literacy assessments and support, and hearing tests.

A model of organisational and individual intervention was proposed. It involved:

1) audits of workplace acoustics and communications processes;
2) supervisor training and mentoring;
3) wellness planning with workers.

There were also important 'peer support' strategies that could be implemented.

Stranger Danger: The benefits of team-work

As part of an agreement with a mining company, an Indigenous community stipulated that a number of traineeships involving local community members would be completed. At first, the plan was to place trainees individually with contractors on the site, and assign them a mentor who would work with them. However, this did not work.

Many of the contractors found it hard to work with the trainees. The contracting staff changed constantly and the trainees found they were continually working with new people who described them as 'unreliable' and 'difficult to communicate with'. The mining company was bound by their training agreement. When it became clear that the initial training approach was not working, the company employed the trainees directly, as a work-team. This was a very unusual arrangement in an industry which generally relies solely on contractors for most on-site work.

The non-Indigenous man who had been employed to mentor the trainees became the team supervisor. This man had worked in the local community for twelve years and was known as someone who could work successfully with people from the community. The Indigenous work-team soon became an island of social stability on a site where the on-site mining company staff and site contractors were constantly changing. Neither the mining company staff nor the contractors had been able to really get to know the Indigenous trainees. The non-Indigenous supervisor became the 'communications broker' between the constantly changing non-Indigenous workforce and the Indigenous trainees. The supervisor got to know all the trainees well, but found he was able to communicate more easily with some than with others.

When hearing tests were carried out the results showed that 60 % of the trainees had some degree of hearing loss. The trainees that the supervisor got on with better were mostly those with the best hearing. The trainees with no hearing loss would often facilitate communication between the supervisor and those workers who could not hear as well. The supervisor noted that the trainees with hearing loss were generally the most reserved members of the team, and had the most difficulty undertaking independent or individual work.

Eventually the team approach became a very successful operating model. The supervisor of the team became the only non-Indigenous member of staff who had worked at the site for more than a year. Within the team, trainees with good hearing were able to act as 'communication brokers' between the supervisor and those with poorer hearing.

> This adaptive result stands in marked contrast with the original situation when the Indigenous trainees were expected to work individually in the company of continually changing non-Indigenous 'strangers'. This was a setting where 'they' failed.
>
> *Work, Worry and Listening* (Howard, in press)

Organisational processes are influenced in important ways by the widespread incidence of Indigenous functional listening problems. This section describes research carried out in Indigenous health services (Howard, 2006b)

The way those with listening problems operate in the face of communication difficulties is important in determining communication outcomes. One successful Indigenous manager with listening problems commented that she had a reputation for asking 'lots of dumb questions'. They were seen as 'dumb' by others because they concerned information that had already been discussed, or were at a level of detail the others felt was unnecessary. However, these 'dumb' questions were in fact important for this person. She needed to ask them to clarify what had been said, and to build the knowledge frameworks that underpinned her success at work.

Her 'dumb' questions were critical for her success, and if she had allowed the reactions of others to constrain her questioning, she would have been less effective in her work. However, it is common for people with functional listening problems to remain silent when they are unclear about the content of a discussion. This allows them to avoid the hurtful judgments that they are well aware of because of their astute reading of body language.

Indigenous staff with listening problems described strategies that helped them to cope, such as spending extra time on preparation. This helped them to build a basic framework of understanding (thinking-listening skills) about the work they were involved in. They were then able to 'hear' better as their background knowledge filled in the auditory gaps created by their listening problems.

One manager explained that if she was going to attend a meeting, she would read all she could about the topic beforehand, and then talk to people about what was discussed afterwards. This preparation gave her background information on the issues that would be discussed, and some knowledge of the language that would be used. She would also consider what she wanted to say, even to the point of scripting it in her mind. Without this type of preparation she would be worried that she would not understand what was happening at the meeting, and about the possibility that she might be shamed.

Hearing loss can contribute to people feeling more anxious, especially if their conversational partners lack communication skills. It is hard for those who are unfamiliar with the effects of hearing loss to understand how a simple conversation may lead to anxiety, and an accompanying reticence that may be seen by others as inexplicable shyness.

When people regularly miss what is said, it is easy for them to suspect that others may be purposely withholding information. Some Indigenous managers with functional listening

problems commented that they often felt that other managers and staff might be keeping information from them, or not involving them in key decision-making processes. One described her embarrassment after emailing a strongly worded complaint about a decision made without her involvement, only to be told that she was present at the meeting where the decision had been made. She then realised that it was discussed and decided on during a part of the meeting she had 'tuned-out' from.

Certain types of communication - like telephone calls - are particularly difficult for people with hearing loss. Indigenous Health Workers with functional listening problems mentioned they often found it difficult to understand messages delivered over the phone, especially when the call was from a doctor.

> *"The doctors that ring up are hardest, because of the words they use, and way they talk. They ring and want to talk to (GP at health centre) and tell you whole story (about why they are calling). They talk too fast and tell you too much." (*Remote Aboriginal Health Worker with functional listening problems*)*

One manager said that his knowledge of listening problems had improved his understanding of communication difficulties. He felt encouraged to become a more proactive communicator when working with people who had functional listening problems.

> *"It is good to be aware of X's functional listening problems. I take more care to work through issues one-to-one, to make sure he is on board. I try to always give a written briefing that is going to be tabled later so he can read it before it is discussed. When you forget about it and take issues to him that he has not understood it reminds you that you have not worked them through with him. If you are in a meeting and you do not get the support you expected* (from him)*, you think' hang on I have not worked this through with him'. Before* (I knew about functional listening problems) *I would get frustrated and think - why has he not come on board with this?"* (Non-Indigenous manager)

Further, there was evidence that Indigenous staff who understood their own functional listening problems were more confident and effective.

> *"I think I have got a little bit more confidence since our last conversation* (when we talked about functional listening problems)*. I am more comfortable about asking people 'what do you mean?' and I don't jump in with decisions now. I used to jump in and make a decision without understanding everything because I worried that people thought I was taking too long asking about stuff. Now I just keep asking things until I understand everything before I decide something. I do a lot of talking to myself too and say, 'Goodness girl, you've got to start speaking up'. We have had visitors coming here and I have been part of the conversation where I will speak and talk. I mean I never used to do that because I was shy but also because I thought I would be saying the wrong thing, you know."* (Indigenous manager with functional listening problems)
>
> *"It is good to understand why school was so hard for me and why I get so frustrated sometimes. I feel stronger about 'keeping asking'* (for clarification) *and not being*

shamed about asking. It makes me want to make sure the same does not happen with my kids and all those kids we see at the health centre with bad ears." (Aboriginal Health Worker with functional listening problems)

"You know I always thought that I was dumb and that non-Aboriginal people just did not like me. Knowing about this stuff helps me know I am not dumb like I thought. I can do things if it is explained the right way, but non-Aboriginal people mostly can't do that - it is them who are dumb (because thy do not know how to communicate effectively with Aboriginal people with listening problems)." (Aboriginal Health Worker with functional listening problems).

Vocational Education and Training

The VET sector, like so many others, has not engaged with this issue. None of the Indigenous VET review or planning documents make any serious mention of hearing loss as an issue. This is despite the known high prevalence among school age children.

At present the VET sector 'does not know what it does not know'. DEWR did take the initiative to fund some of the research that has led to the development of resources that are mentioned in this submission. However, it has not at this point built on this initiative by supporting the transfer of this knowledge to the sector. The many factors that contribute to this issue being invisible mean the information and resources need to be actively promoted as they will not be discovered.

The following page is from the guide *Supporting Employees who have a Hearing Loss – A Guide for Supervisors and Mentors*, p 11 (Howard & Henderson, 2009)

What's it like for People with Hearing Loss at Work?

Listening is Tiring
People with hearing loss fatigue more quickly because they have to work harder to keep up and comprehend. This is especially so if the person's first language is not English.

Fluctuating Personal Confidence
People with hearing loss may misunderstand, not understand at all, or be slower to understand what has been said. They may be hesitant about volunteering their ideas until they are 100 per cent sure about what is said.

Getting the Point Across
People with hearing loss may also take more time to put their thoughts into words, and may sometimes mispronounce words or be unsure of the right word to use. This is especially so for people who have had a hearing loss from a young age, as their language development may have been compromised - especially when their first language is not English.

Shame
Hard of hearing people often feel shamed by the misjudgments and social challenges described in this booklet.

Frustration and Anxiety
Given the above common experiences, it is not surprising that people with hearing loss generally have more frustration and anxiety than their normal hearing peers. They may even feel at times that others are whispering or mumbling on purpose to exclude them. It has been found that the feelings of frustration and anxiety are lessened when people and tasks are familiar, and when background noise is reduced.

Supporting employees who have a hearing loss – *A Guide for Supervisors and Mentors* *pg 11*

Agencies employing Indigenous staff can also take practical steps to create an acoustic environment to help people with listening problems to perform better at work. Some suggestions are as follows:

- Consider acoustic conditions when selecting and planning work spaces.
- Conduct a 'noise audit' to review the placement of desks and meeting spaces. Noise dampening materials, such as acoustic ceiling tiles, carpets and curtains can improve acoustics.
- Consider the acoustics of the rooms that are used for meetings, and use amplification systems for larger groups.
- Screen staff for listening problems and support those with listening problems by taking special care with the acoustics of their work environment.
- When purchasing new equipment, give preference to machinery with the lowest noise emission levels.
- Put noisy appliances and machines in places where they will not be heard during conversations.
- Place computer equipment in locations which minimise intrusive noise.
- Provide readily accessible 'quiet spaces' where conversations can take place, particularly in open-plan offices.
- Use amplified equipment (telephones and equipment for meetings) as a standard practice, and make sure that telephones are available in quiet and readily accessible places.
- Ensure that staff training and mentoring includes information on functional listening problems and the way in which they affect cross-cultural management concerns, such as performance management and conflict resolution.

The comments of Steven Torres Carne that are recorded on the following web address highlight the importance of acoustics in the workplace.

Steven Torres Carne talks about the importance of acoustics in the workplace at the below address.

http://www.hstac.com.au/HearThis/media/videostevenacoustics.html

Recommendations

8.1 Hearing loss should be part of job capacity assessments of Indigenous people conducted by Centrelink

8.2 Hearing loss to be promoted as an issue in the development of Indigenous employment plans. This would include addressing its implications for recruitment, workplace safety, training and workplace communication.

8.3 Resources to train those who work with Indigenous adults in employment or in pre-employment programs need to be developed and promoted.

8.4 Indigenous VET needs to come to terms with hearing loss as an issue. This means:

a. having processes to screen participants for hearing loss,
b. considering acoustics of training areas,
c. using appropriate amplification,
d. training/mentoring staff (for example including hearing loss in workplace training and assessment certificate training) in needs of Indigenous participants with hearing loss and/or auditory processing problems.

8.5 Indigenous participants in training need appropriate support processes to address both the learning and psycho-social needs of those involved in training.

The following page is from the guide *Supporting Employees who have a Hearing Loss – A Guide for Supervisors and Mentors*, p29 (Howard & Henderson, 2009). These are some of the practical ways that employers can support their employees who have a hearing loss.

Workplace Action Plan for Supervisors

- ☐ Set up 'hearing loss' friendly recruitment processes — Page 21
- ☐ Develop processes to identify employees with hearing loss in need of workplace support — Page 6
- ☐ Identify and address workplace safety issues for employees with hearing loss — Page 19
- ☐ Develop 'hearing loss' friendly telephone equipment, placement and usage — Page 17,18
- ☐ Conduct workplace 'communication audit' to identify and improve 'communication problem spots' — Page 9
- ☐ Consider the need for ALDs (Assistive Listening Devices) to improve communication in 'communication problem spots'. Go to **www.eartroubles.com** for more information.
- ☐ Adapt training processes to be 'hearing loss friendly' — Page 20
- ☐ Incorporate communication implications of widespread hearing loss into cross-cultural training programs — Page 23,26
- ☐ Think about how hearing loss needs to be addressed in Indigenous employment policy — Page 24
- ☐ Determine if staff need formal training in workplace issues around hearing loss. Go to **www.eartroubles.com** for more information.
- ☐ Maintain 'hearing loss friendly' meeting processes — Page 15
- ☐ Improve personal communication skills — Page 12
- ☐ Use more visual communication strategies — Page 13
- ☐ Encourage use of 'listening mates' and teamwork — Page 13

Communication Problem Spots

'communication problem spots' are places or times when it is difficult to understand what is said because of one of more of the following:

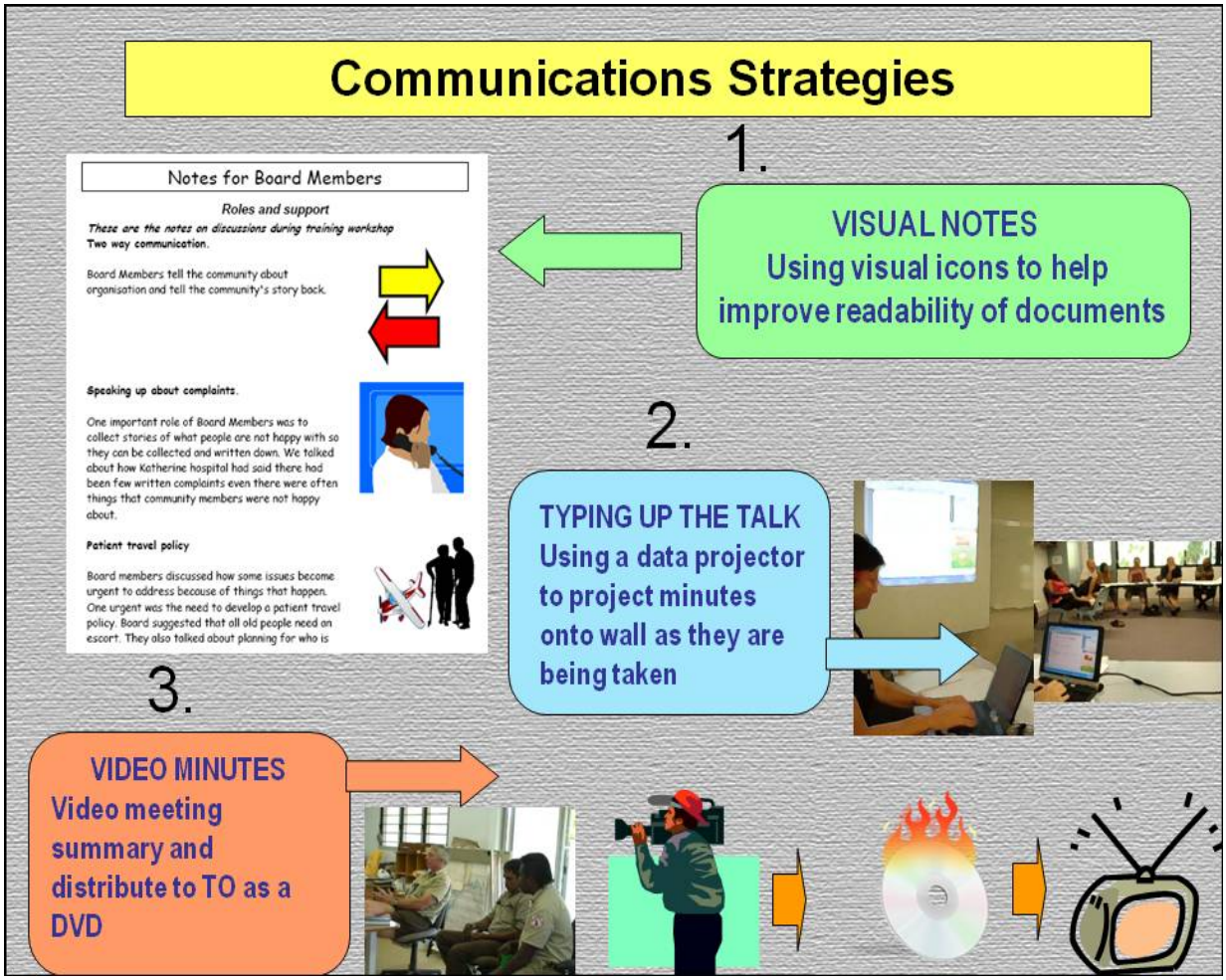
- ***poor acoustics;***
- ***the discussion of unfamiliar topics;***
- ***listening to unfamiliar people; and/or***
- ***talking to people who prompt social discomfit and anxiety through being quick to judge others on how well they understand what is said or express themselves verbally.***

Supporting employees who have a hearing loss – *A Guide for Supervisors and Mentors* pg 29

9. Governance

Hearing loss can influence participation in meetings and decision making in significant ways. Communication among members of governing boards and councils was considered in a study (Howard, 2006). The deliberations of these bodies play a central role in the operation of community-controlled organisations.

The effect of listening problems varied according to the nature of the topic under discussion. The management committees were primarily concerned with two types of issues. First, committee members were discussing 'community matters' - representing the interests of their community, conveying community wishes, and reviewing and addressing complaints. Second, they were discussing 'external matters' in response to demands of non-Indigenous organisations including government regulators, professionals and researchers.



This is an example of training materials to support participation in meetings for Indigenous people with hearing loss.

Functional listening problems were less evident when the discussion was focused on community issues and more noticeable when external matters were addressed. This reflects the differences in the knowledge frameworks of participants and their communication experience in each subject area.

In general, there was no time constraint when community issues were considered. Discussion was also conducted in language committee members were familiar with, and signing was also used. On the other hand, discussion about 'external matters' often involved culturally unfamiliar concepts, and took place under time constraints, with limited opportunity for clarification, where matters were often considered in an abstract way.

It was noticeable that in one of the committees, which had a longstanding reputation for effective governance, the members acted as a team. Some had literacy and language skills that gave them a better understanding of 'non-Aboriginal' issues and they played a role in helping others to understand these. Some members with listening problems were important community leaders whose input into discussions or approval of decisions was crucial, and the committee members worked as a team to engage them in a meaningful way.

This study suggested ways to improve governance; these include the following:

- Before meetings provide a plain language written outline of the issues that will be discussed. Include explanations of any technical or unfamiliar language.
- Discuss issues using diagrams or illustrations that help to explain what is said.
- Keep to the order of topics on the agenda, and note the transition from one topic to the next one.
- Use gestures, tonal variation and facial expressions during any presentation - it is hard to listen to a '*blank face going blah, blah, blah*'.
- Check the acoustics of the meeting place, minimise background noise and use amplification.

The first two suggestions help people to build the individual 'frameworks of knowledge' that are needed if they are to understand each subject and discuss the relevant issues. When the agenda is followed and the transition from one topic to the next is noted during the meeting, people know which topics are being addressed at any one time. They are then able to draw on the relevant framework of knowledge to help them understand points that might otherwise be unclear, and they are better able to contribute to discussion in an appropriate way. Amplification helps ensure that what is said has the best chance of being heard.

Governance training has been identified as being needed to improve the operations of community controlled Indigenous organisations. This training focuses on helping Indigenous people understand and comply with Western governance and accountability processes. The research that has been reported in this section points to these training processes being more effective if they considered the widespread hearing loss among Indigenous decision

makers. Further, it also points to the need to train those working with Indigenous decision makers in how they can communicate more effectively to assist informed decision making.

Recommendations

9.1 Indigenous governance needs to be supported through addressing the communications issues outlined in this section. This involves improving acoustics, providing amplification when needed and providing appropriate communications training to committees and those working with them.

HEARING LOSS AND CULTURAL DIFFERENCES

In cross-cultural communication involving Indigenous people with hearing loss there is a complex interaction between hearing loss and cultural and linguistic differences. Hearing loss in the Indigenous community:

- is often obscured by a focus on cultural and linguistic differences;
- contributes to difficulties for many people in understanding Western world views, thereby magnifying cultural differences;
- may obstruct participation in cultural activities and the development of some cultural knowledge – including language; and
- affects cross-cultural communication in ways that can often be best addressed through culturally familiar communication and support strategies

This section discusses how hearing loss contributes to difficulties for many people in understanding Western world views. A shared 'world view' that are important for successful inter-cultural communication develop as the result of a series of successful cross-cultural negotiations over time (Lowell et al., 2005). However, Indigenous people with hearing loss are less likely to be able to successfully participate in the interchanges and negotiations that are needed to arrive at a shared 'world view' (Howard, 2006b).

Firstly, when people with hearing loss do engage in intercultural communication, they are often unable to do so as successfully as those who can hear well. They may misunderstand what is said. They are often slower to learn concepts. They may distract a group with 'off topic' interjections or they may just maintain a perplexed silence.

Secondly, Indigenous people with hearing loss often seek to cope with their communication difficulties by avoiding or minimising their involvement in intercultural communication. In the case of Indigenous children with hearing loss in Australia, they are absent from school more often than others (NACCHO, 2003). When they are at school they are more likely to try to avoid engagement with their teachers and involvement in many classroom activities (Howard, 1994, 2004).

Many Indigenous adults with hearing loss employ the same tactics – absence or avoidance.

> "*I try to have little to do with white people*" (Aboriginal Health Worker with hearing loss).

By avoiding or minimising their involvement in intercultural communication, Indigenous people with hearing loss are dealing with the anxiety they may otherwise experience during intercultural communication, where successful communication depends on levels of auditory/verbal skill they do not have. However, if they are familiar with the people and social processes involved, this can help to minimise their anxiety, notwithstanding any hearing loss.

Communication with unfamiliar people in the context of unfamiliar social processes compounds the communication difficulties that result from hearing loss. For example,

school children with hearing loss often have more difficulty when dealing with a temporary teacher (an unfamiliar person) and exhibit more significant behaviour problems when they are participating in school excursions (involves unfamiliar social process).

Over time, the use of avoidance to cope with adverse experiences and their limited success in cross-cultural communication has a cumulative result. To begin with, they experience basic communication difficulties. They have difficulty hearing-what-is-said, because of their hearing loss. This, in turn, can lead to difficulty with understanding-what-is-heard, because they have not acquired the familiarity with Western 'world views' that would help them to understand-what-is-said.

The problem compounds first in childhood and then into adulthood; many people with hearing loss seek to avoid or minimise the risks of intercultural communication – anxiety, communicative failure and 'shame'. As a result, those with hearing loss develop less familiarity with Western ways of doing things than do other members of their group.

The implications of the compounded impact of widespread hearing loss and cultural and linguistic differences are profound. It is an important factor in fragile or failed communication that contributes to Indigenous disadvantage in so many areas. It is one reason in why Indigenous workers are so often critical to the access of Indigenous people to mainstream services.

Recommendations

10.1 That 'cultural familiarity' and the importance of culturally based communication skills should be treated as a core element in providing services to Indigenous people, especially those known to or likely to have a hearing loss.

10.2 That the interaction between culture and hearing loss should be included in cross-cultural training and in consideration of what skills are needed to be cross-culturally competent.

10.3 Research be undertaken on the above issues as well as the ways hearing loss may contribute to erosion of Indigenous languages and cultures and how this can be minimised.

AWARENESS OF CONDUCTIVE HEARING LOSS

Health information on middle ear disease and hearing loss can be obscure and its relevance unclear for many Indigenous families, especially those from remote areas. However, the adverse social and learning outcomes of ear disease are more observable to families once they are alerted to their connection with middle ear disease.

Participant responses during workshops on social outcomes of ear disease conducted throughout Northern Australia indicate that Indigenous families' awareness of the adverse social outcomes of their child's middle ear disease and associated hearing loss can significantly enhance their motivation to seek treatment for children's ear disease and persist with recommended treatments (Howard & Hampton, 2006).

There are obstacles to awareness of middle ear disease and related hearing loss. A common pathway which prompts treatment of middle ear disease in young children is family, child-care or early education workers identifying communication and/or behavioural indicators of hearing loss. This pathway of referral is especially important for Indigenous children as ear disease among Indigenous children may be otherwise asymptomatic (Leach, Morris & Mathews, 2008).

Additionally, Indigenous cultures often encourage a greater degree of stoicism among children which means that Indigenous children may often complain less about pain and discomfort related to ear disease even when it is experienced (Malin, 1990). Since family members' awareness of pain and fever is less likely to prompt early treatment, other referral triggers are important with Indigenous children.

Indigenous families may not observe these social problems or understand their significance in terms of ear disease for a number of reasons. Communication problems related to hearing loss are so common in many Indigenous communities that they are often accepted as normal or mistakenly seen as a particular personality trait. Alternatively, widespread culturally based non-verbal communication skills act to minimise communication difficulties within families so that social and communication problems may be less evident.

In addition, information on middle ear disease and hearing loss is unavailable in a form accessible to adults with low English language literacy or, when available, its relevance can be unclear for many Indigenous families and workers, especially those in remote areas who have limited exposure to Western concepts of health.

However the adverse social and learning outcomes of ear disease are often very observable and a serious concern for Indigenous families and workers. Being alerted to the connection between social problems and ear disease can significantly enhance Indigenous family and staff's capacity and motivation to support children's engagement with health services as well as persist with recommended treatments.

There are also other quite subtle ways whereby Indigenous people with hearing loss are obscured in cross-cultural contexts. Culturally based differences in communication styles

often contribute to systematic errors by non-Indigenous adults in assessing whether an Indigenous child is likely to have a hearing loss (Howard, 2006b). In many Indigenous cultures it is socially appropriate to make less eye contact and be less physically oriented towards the speaker, than is the case in Western culture (Lowell, 1994).

A common exception to this is Indigenous children with hearing loss who often maintain an intent visual focus on the speaker in order to engage in face watching and lip-reading that help to compensate for diminished auditory input (Howard, 2006b). When a non-Indigenous person makes a judgment as to who may have a hearing loss they are liable to see the focused visual attention of Indigenous children with hearing loss as an indicator that they are 'good listeners' and therefore unlikely to have hearing loss.

Conversely, non-Indigenous adults are likely to see Indigenous children who demonstrate, from their perspective, visual and physical inattention as having 'poor listening skills', possibly related to having a hearing loss. These cross-cultural misperceptions can result in the referral of the wrong children for hearing tests and children with hearing loss not being referred (Howard, 2006b).

Explicit training for teachers and awareness programs for families is needed for both Indigenous families and those working with children to overcome the obstacles to Indigenous children's referral for hearing testing, treatment of middle ear disease and minimisation of the adverse outcomes that can result from unidentified hearing loss.

> *"To develop community awareness, participation and collaboration, children, parents, teachers and the community at large need to understand the important role that hearing plays in maintaining a healthy lifestyle and the difficulties that are faced by those with hearing loss ...awareness campaigns must target the entire community."* (Burrow et al., 2009, p.14)

Awareness of hearing loss can be helped by awareness of the social outcomes of hearing loss. One mother, also a health worker, realised her daughter might have hearing problems after she participated in training on the social problems that can result from hearing difficulties. Hearing tests later confirmed that her child had hearing problems.

> *"At the workshop* (Health Worker training that had a session on social outcomes of middle ear disease) *it clicked, the patterns of behaviour and the withdrawal that you described. It was a relief to know. …I (earlier) felt depressed and frustrated because I didn't know what was going on. I was blaming myself. I thought it was my fault and I was a bad mother. I felt like I was letting her down. I was trying to figure out what to do. The behaviour problem came at school. They never suggested anything and it was depressing not knowing what to do…but it was getting me down and it was the stress. I was growling her and yelling. I was pushing her away because I didn't know how to deal with it. It made us grow apart. I did not want to be around her. I didn't want to deal with it, I didn't know how to deal with it. It really stresses me. Other people* (people in the family) *scatter coz I am going off my head yelling at her."* (Indigenous mother who is also a health worker)

Phoenix Consulting has developed resources based on a rationale that local Indigenous people telling about the issues (often using audio visual resources) is a preferred strategy for raising awareness about Indigenous hearing loss. Some instances of this are:

A) Development of the Conductive Hearing Loss Story. The process for developing this resource is described below.

1) Training local Indigenous people in the social outcomes of middle ear disease and ear disease prevention.

2) Local Indigenous people are videoed retelling the Conductive Hearing Loss story. This is then edited into a resource for that community. This picture is the cover of one such video. A sample of this video can be viewed at the following web address. http://www.youtube.com/watch?v=-2l_mao5CWY

B) Developing online audio visual resources aimed at Indigenous people.
One project involved collaboration with HSTAC (the Human Services Training Advisory Council) in a project funded by The Northern Territory Department of Education. These videos have been referred to in this document. The rationale for a focus on audio visual resources is, firstly, text only materials have limited access when a high proportion of the community have low literacy levels, which is in part related to widespread early hearing loss. Secondly, it is common that Indigenous knowledge is often researched and repackaged by non-Indigenous people before being represented to Indigenous people. This process can contribute to unintentional disempowerment through the repackaged material seeming to come from the non-Indigenous world. However, audio visual materials which reveal the original informants make transparent that the information is derived from Indigenous knowledge and experience.

C) Commissioning Indigenous people to paint their understanding of the implications of Conductive Hearing Loss. The painting on the cover of this report is an example.

Phoenix Consulting together with the Batchelor Institute of Tertiary Education are currently working on a project funded by the Commonwealth Department of Health and Aging to

encourage early referral of children. The project involves Alison Wunungmurra. Alison is an experienced childcare worker who is currently training as a teacher.

Alison talks about her perspective on the need to raise awareness in Indigenous communities about hearing loss at the website below.

http://www.youtube.com/user/eartroubles#p/u/0/c835cW37m4I

Recommendations

11.1 Hearing loss awareness and action programs are needed to bring this issue into the open among Indigenous and non-Indigenous people. These programs can be most effective for Indigenous people if they involve a 'ripple process'. This is done by providing information to key people in the community who then re-tell the story to others in ways that are easiest to understand and most encourage action.

These programs generally are most effective if they start with what interests people.

a. *For teachers* this means starting with how understanding this issue and responding differently can manage children's behaviour problems more effectively and improve educational outcomes.

b. For health workers this means starting with how improved communication can improve patient compliance and health outcomes generally.

c. *For families* it means starting with how children, families and culture can be stronger.

NOISE INDUCED HEARING LOSS

As well as awareness about hearing loss that is a result of childhood middle ear disease there is a need for awareness of the dangers of excessive exposure to noise. Indigenous workers are disproportionally employed in unskilled and semi-skilled occupations where there is a greater risk of exposure to high noise levels. Indigenous people in remote communities also live in crowded houses that are often very noisy and engage in recreational activities that potentially expose them to excessive noise levels.

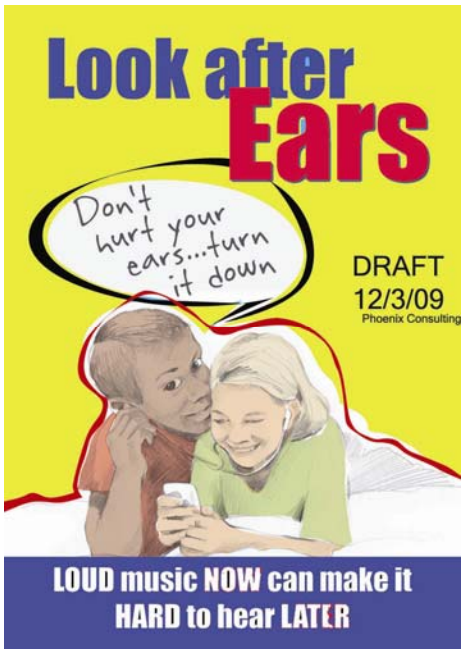
The high proportion of Indigenous people with hearing loss means that loud music, loud TVs and loud voices all contribute to a noise exposure that is significantly higher than in the non-Indigenous community. As is the case with so many Indigenous hearing issues there is currently no research evidence on whether excessive domestic noise exposure represents a risk to noise induced hearing loss. There are anecdotal reports that many adults with some level of hearing loss seek out or tolerate exposure to high noise levels which creates discomfit for other family members and may present a risk of noise induced hearing loss for those they live with. Families that include adults with hearing loss often complain of excessive noise levels from television or sound systems.

There has been a recent trend in some remote communities for 'windfall' monies from mining royalties or government payments to be used to buy expensive high output sound systems. Very young children, exhausted from play, have been observed asleep for many hours nearby these high noise output systems that operate much of the day.

Exposure to recreational noise has become an increasing concern as a risk factor for preventable hearing loss (Yacci, 2005). Indigenous youth have a high exposure to recreational noise. There is extensive anecdotal information that Indigenous youth listen to portable music players for extended periods with the volume set at a high level. The high levels of unemployment and limited recreational opportunities available to Indigenous youth (due to poverty, geographical remoteness, etc) mean they may use portable music players more often and for longer periods than other youth. The popularity of bands in many Indigenous communities also means there are semi-professional audio systems operating for long periods in domestic environments.

Many Indigenous people's engagement in hunting using firearms is greater than in the mainstream community and unlike other sections of the Australian community is likely to involve children of all ages. Involvement in hunting is an important cultural practice which maintains Indigenous family's connection to country and ancestral spirits that reside there. The food provided by hunting is seen to provide special spiritually-connected nourishment that enhances social and emotional wellbeing (Howard, 2006c). Therefore it is important that whole families and especially children participate in hunting as a means of transmission and maintenance of culture. This means that Indigenous people including quite young children may be regularly exposed to excessive noise from the discharge of firearms. While traditional hunting practices have adapted to use firearms, the knowledge about the risks from exposure to noise from discharged firearms is not widespread, especially in remote communities.

There are currently no extensive Australian child focussed hearing conservation programs, let alone Indigenous focused programs. The extent of hearing loss in the Indigenous population suggests they are needed. Such programs would need to reflect established principles in Indigenous health promotion. These include ensuring ongoing community input, reflecting the social context in which Indigenous people live their lives and respecting the values of Indigenous cultures (Bellew, Raymond & Hughes, 2004).



This is an example of a poster for a 'noise can hurt program.

Education about 'noise can hurt' should include the potentially damaging effects background noise can have, especially in a population with a high incidence of hearing loss, on communication, access to services, education and psycho-social wellbeing. It is expected that excessive noise from use of portable listening devices will create an epidemic of hearing loss in the future. For many Indigenous people this epidemic will compound the existing epidemic of hearing loss from endemic ear disease.

As outlined earlier research indicates that for Indigenous people with hearing loss high background noise contributes to poor educational outcomes (Howard, 2004), behaviour problems at school (Howard, 2006a) as well as limited occupational performance and high stress levels at work (Howard, 2007a). Anecdotal reports also suggest high background noise levels inhibit access to health services for Indigenous people with hearing loss plus contributing to poor health outcomes, especially in areas where communication is critical such as chronic disease management and maternal and child health (Howard, 2007b).

Education about the effects on communication of the combination of hearing loss and background noise is hugely important to minimise adverse communication, service access, learning and psycho-social outcomes for the many Indigenous people with hearing loss. Understanding the effect of background noise on communication in a population with a high incidence of hearing loss is a critical for those providing services to Indigenous clients and can help lesson communication and psycho-social burden of Indigenous hearing loss.

The draft poster earlier outlines the type of resources that could be developed for Indigenous people. Instead of a 'self care' focused message typical of western hearing conservation programs it appeals to the values of people from 'collective' cultures where looking after others is a strong cultural priority.

Phoenix Consulting together with the Batchelor Institute of Tertiary Education are currently working on a project funded by the Commonwealth Department of Health and Aging to

explore and develop community education program on the dangers of excessive noise exposure.

Recommendations

12.1 Research is needed on:

a. how to minimise noise induced hearing loss among Indigenous people that could compound existing ear disease related hearing loss.

b. how to minimise the adverse effects from compounded hearing loss when it does occur. For example, how the greater need for amplification can be met.

RESEARCH MATTERS

Recommendations for research have been made consistently in this submission. There are important considerations on how to structure this research. The experience of research and service provision that has occurred in the Education sector are informative of what to do as well what not to do.

Lessons from Education

The education sector is the only area where there has been an attempt to partially address the issues around Indigenous Conductive Hearing Loss. There are lessons to be learned from experience in service provision and research in education around Conductive Hearing Loss.

There is a tendency when there is an area that is not well understood for programs and research to focus on what the people doing it know. When you don't know what to do people do what they know. An example of this is when health and education professionals first designed education programs on Indigenous Conductive Hearing Loss. These programs focused on what was known – health programs which focused on understanding ear disease and helping prevent ear disease. These were influenced by well meaning professionals who knew about health aspects of ear disease but not educational aspects of Indigenous Conductive Hearing Loss.

When specialist educators of the deaf were employed in Indigenous hearing programs they also tended to do what they knew. They had been trained to educate deaf students - the training of teachers of the deaf usually gives scant attention (a day or two in a one or two year course) to the needs of children with Conductive Hearing Loss. Services for students with Conductive Hearing Loss were organised on the same 'special education' model that was used for children with more severe sensori-neural hearing loss. This model assumes a few students having special needs and these being met through intensive individualised help. However, this model is unsustainable when the majority of students in classes are affected by Conductive Hearing Loss.

The absence of relevant research on supporting children with Conductive Hearing Loss to inform credentialed 'experts' has contributed to poor outcomes[2]. The tendency of programs was, firstly, to 'do-what-is-known-by-the-professionals rather than what is needed by the clients'. Secondly, there was a tendency for agencies unaware of, or uncommitted to addressing the issue to run programs that were superficial, token and/or diverted funds to what were seen as higher priority areas. The result of these processes was that programs failed or had limited outcomes.

There is much to be learned from this experience. Programs in other sectors will have limited outcomes if they do not have access to an evidence base derived from relevant research. Further, if programs are implemented as fast-fix short-term projects without a self-learning capacity they are likely to be expensive and have limited outcomes. The failure or limited outcomes of such programs act to inhibit other more relevant programs in the

[2] This generalisation does not apply to those professionals who through their own efforts and experiences have educated themselves about Conductive Hearing Loss and usually have been frustrated in their attempts to raise awareness of the issue in their professions and within the organisations where they work.

future. For example, teachers who have been participants in a mainly-health-focused-program on Conductive Hearing Loss often respond that they have 'done' Conductive Hearing Loss and are reluctant to participate in further training that is more educationally focused. It is only when teachers do complete a mainly-education-focused-program that they realise the limited relevance for them of the mainly-health-focused-program focused training was. Doing things badly first makes it harder to do things better later.

The reality is that there will be programs run before background research can is completed. In this case they need to be designed to be self-learning. This can be done by having an action research component built in to delivery so that implementation also develops the knowledge base about the issue.

Ongoing professional collaboration is important in this process. The Kalgoorlie Ear Health Conference has made a significant contribution in the health and education sectors.

The Kalgoorlie Ear Health Conference

The Kalgoorlie Ear Health Conference is a biannual conference on ear health held in Kalgoorlie, Western Australia. The conference presents on research and programs and involves both education and health professionals. This conference has provided several 'generations' of professionals interested in ear health and Conductive Hearing Loss with important professional development. It is the only Australian conference that brings together leaders in the field of research and service provision from both health and education.

The nature of the sector is that those attending the conference are a combination of a few old hands and a lot of those new to the work – the high turnover in Indigenous health and education staff, together with limited pre-service training about the issue, makes orientation and professional development an ongoing issue. The conference contributes to this desperately needed post service professional development. One improvement to serving this function could be to video presentations. It is important to derive from this conference as many resources that can help induct and orientate those coming into the sector between conferences. There are potential 'economies of continuity' in using the presentations at past conferences to educate a constantly changing future workforce. This is of benefit to the agencies constantly employing staff in the sector as well as future conferences as delegates can do some pre-conference online viewing to prepare themselves.

However, this development and even continuation of the conference is not possible with existing resources. It is not sustainable for the conference to continue to be run by the staff of one health region in Western Australia. The existence of the conference represents a grass roots response to the national institutional neglect of this area. However, it is unrealistic to expect it to continue to be run by a small voluntary group of staff on top of their existing

full-time workload. Clearly it needs some dedicated resources to make it sustainable into the future.

Recommendations

13.1 Ongoing funding be provided to continue and develop the Kalgoorlie ear health conference.

13.2 The establishment of an institute of Indigenous Hearing and Communication. The Institute would:

- a. Drive and coordinate the research needs of the area
- b. Promote awareness of Indigenous hearing loss and its outcomes
- c. Lobby and advocate
- d. Carry out ongoing reviews of different jurisdictions activities in
  - Health
  - Education
  - Criminal justice
  - Indigenous access to services
  - Professional training
  - Promoting professional and community awareness

The Institute would be multi-disciplinary and multi-sector with a holistic focus. It would aim to promote multi-disciplinary cross-cultural research and service provision. The focus would be on applied research that informed and improved service provision to Indigenous people, advocated for the needs of Indigenous people with hearing loss.

A key aim would be to enable co-ordination and transfer of existing knowledge as well as development of new knowledge. Training and support for the rapidly changing non-Indigenous workforce, especially in remote Indigenous areas, needs ways to address the constant loss of 'corporate knowledge' in this sector. One aim of the Institute would be to act as a repository for developed knowledge and an agent to promote dissemination of knowledge.

CONCLUSION

The outcomes of Indigenous hearing loss are a largely invisible factor contributing to Indigenous disadvantage. The 'invisibility' of Indigenous hearing loss stems in large part from the fact that mainstream systems have not successfully engaged with the issue. The present system-wide failings include:

- the limited access that Indigenous people have to audiological services and amplification devices;
- the focus on Conductive Hearing Loss among children, as a health-only rather than also a communication issue with many implications;
- the limited training most 'hearing loss' professionals receive about issues associated with Conductive Hearing Loss;
- the complete absence of training on this issue of most other professions who work with Indigenous clients;
- that core Australian institutions do not give this issue adequate, or in many cases any priority;
- the limited understanding of the different demographic profile and psycho-social influence of hearing loss in the Indigenous community compared with hearing loss in the mainstream Australian community;
- the concurrent neglect of educational and occupational issues that also affect the smaller number of hard-of-hearing in the mainstream community; and
- the difficulties that professional and government funded services have in overcoming 'silo' mentalities to address this multi-disciplinary issue in a holistic way.

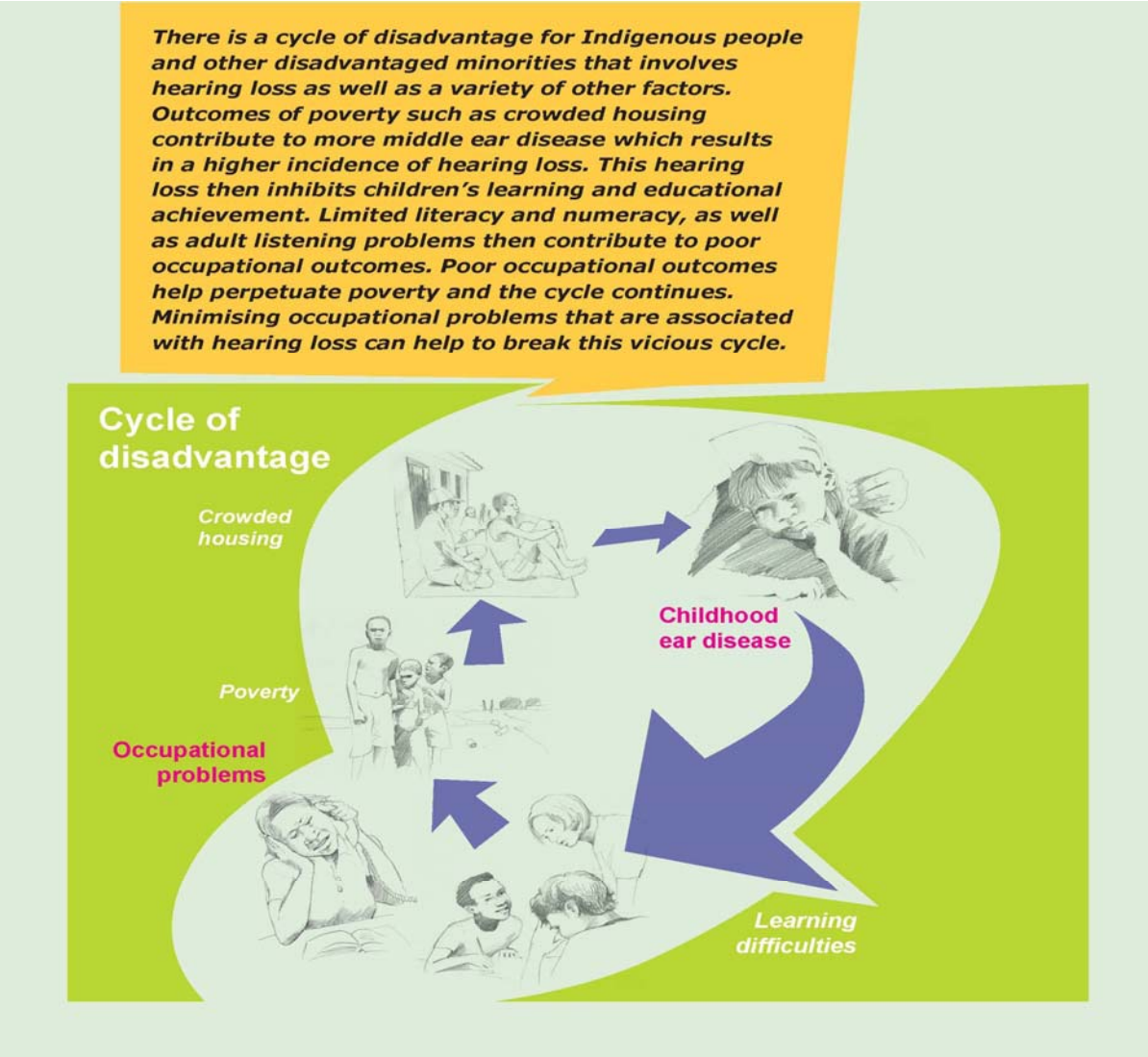
These systemic factors combine to obscure and disregard hearing loss among Indigenous people at an individual, organisational and system levels. A common rationale to justify avoidance of the issue among non-health agencies is to claim that 'it's a health issue'. The logic being that since the problem starts with children's middle ear disease, non-health agencies need not become involved, as the health sector will eventually find and provide a solution. This is a 'waiting for the medical magic bullet' approach.

While it is true that hearing problems generally begin as a health issue they ultimately have education, training, employment, judicial as well as social and emotional outcomes. Conductive Hearing Loss and its communication and psycho-social outcomes needs to be addressed in all of these sectors. The ongoing failure of mainstream institutions to do so contributes to the national disgrace that Indigenous disadvantage represents for all Australians.

Efforts in the last 30 years have been focussed on attempts to address the health aspects of middle ear disease (Morris et al., 2007). In isolation and without consideration of the many non-health consequences of hearing loss for Indigenous children and adults, such health initiatives are likely to have a limited effect on the contribution of hearing loss to the cycle of disadvantage that many Indigenous people are trapped within; poverty contributes to a higher incidence of middle ear disease among children , which results in Conductive Hearing

Loss, which leads on to poor social, educational and employment outcomes, which perpetuates poverty.

The following slide explains and illustrates this cycle of disadvantage.



Middle ear disease is an important health issue that needs to be addressed, but there is also a need for a greater focus on the communicative and psycho-social consequences of hearing loss among Indigenous people which are seldom fully appreciated or addressed. The majority of work undertaken by Phoenix Consulting and described in this submission has been largely unfunded because the social outcomes of ear disease have not been a priority for most sectors or for funders of research. This means most of the work described has been small scale studies or informed speculation based on experiences when working with individuals or organisations.

Because this is a multidisciplinary issue it is easily avoided given the 'silo' mentality that pervades most government agencies and government funded services. The clearest example of this was an attempt by Phoenix Consulting to simultaneously lobby a health and education minister in the same jurisdiction about the implication of hearing loss among

Indigenous people for their department. Each minister referred their letter to the other. A shared problem easily becomes no one's problem.

This is an orphan issue that initially impacts on children who are effectively abandoned by Australian institutions, who as a result, grow up with limited opportunities and face many struggles. In the course of these struggles they are too often blamed in various ways, often by those who have not fulfilled their mandated responsibilities.

Schooling has the clearest examples where Indigenous parents are held 'responsible' for their children not attending schools, yet school systems do not fulfil their responsibilities in providing adequate educational opportunities for Indigenous children with hearing loss. Education systems need to do better in training teachers, providing appropriate resourcing for schools including amplification equipment, acoustically adequate classrooms and smaller class sizes. If government education systems[3] for Indigenous children were 'parents' they would likely be charged and found guilty of chronic and ongoing neglect of their responsibilities.

A core factor in the neglect of this issue is the failure by governments at all levels to engage with this issue. Being largely an invisible issue it does not have powerful advocates which in an era of reactive government results in 'death by silence' both metaphorically and in some cases literally.

> *An Indigenous man who despite his hearing loss had consistently held a job for most of his life. His low paid job meant he could not afford to buy a hearing aid and because he was working he was not eligible for government support to obtain one. The man died in his early 50's. He was attacked by a dog that he did not hear coming up behind him. Defending himself from the dog with a stick angered the dog owner who then assaulted him with an iron bar. He died from the injuries he received in the assault.*

Despite its invisibility, widespread hearing loss among Indigenous Australians acts as a persistent barrier to communication. It also contributes indirectly to the linguistic and cultural barriers that constrain intercultural communication. Many of the problems that arise are not caused solely as a result of hearing loss. They arise because communication is impeded by the interaction of noisy environments and culturally unfamiliar communication processes with widespread hearing loss.

From what we presently know, to successfully overcome these barriers, three things are important.

1. Knowing which people have hearing loss
2. Improving environmental acoustics by limiting background noise levels, and
3. Adopting more effective communication processes, including culturally based communication strategies.

[3] This refers to the 'system' not the many dedicated individuals who despite being under resourced and inadequately supported continue to struggle to support children with hearing loss to the best of their ability.

What does this mean in practical terms? Firstly, access to audiological services for hearing tests is often problematic, especially in remote areas, but 'easy-to-use' hearing screening strategies can help to identify probable hearing loss (Howard, 1993). Secondly, there are a number of ways to acoustically improve an environment. In schools sound field amplification where the teachers voice is amplified to the whole class is beneficial as is adapting buildings to prevent noise intrusion and limit reverberation (echo) in rooms (Wilson et al., 2002).

One inexpensive intervention is simply to minimise background noise levels during communication. All too often, non-Indigenous professionals with good hearing decide whether or not an acoustic environment is adequate for communication with Indigenous people who have hearing loss that the professional does not know or think about. Communication outcomes can be significantly improved if people are aware that they may be talking with people who quite possibly have a hearing loss, and if they take steps to minimise background noise levels (Howard, 2006b).

Thirdly, communication problems that arise because of unfamiliar cultural communication strategies and differing 'world views' can be addressed through the involvement of Indigenous staff in service provision and as communication brokers, as well as training all staff[4] in effective communication strategies for people with hearing loss.

This is not to suggest that we already know enough about these issues to be certain about how best to address them. There is a need for more research into the consequences of widespread hearing loss among Indigenous people - children and adults, and ways of addressing this problem. In the field of education, there have been a few in depth studies. In the criminal justice and the welfare sectors, as well as in other contexts, there has been no formal research conducted. Without a fuller understanding of the long term and 'life cycle' consequences of Indigenous hearing Loss, in interaction with other environmental and cultural factors, it will be difficult to fully assess and effectively address the problems arising from childhood middle ear disease.

Undertaking this work will also be of benefit to many outside Australia. It has been estimated that a third of the populations in developing countries experience hearing loss because of childhood ear disease that is related to poverty (Berman, 1995). This means there are at least a billion people world wide who can be assisted by a better understanding of these issues.

[4] While Indigenous people can often communicate effectively with Indigenous people with hearing loss, they are often unaware of their own or others' hearing loss. When they become aware of these issues they can use their communication skills even more effectively.

ACKNOWLEDGEMENTS

Thank you to Elaine Cox, Steven Torres Carne and Alison Wunungmurra for making their experiences and insights available to assist others to understand this issue. Thanks to Valda Gaykamunga for the paintings that were used in this submission. Many thank to Sheri Lochner who helped with the formatting and editing of this submission. Thanks are also due to the many people (too many to name) who have shared experiences, knowledge and ideas, participated in or supported the research described in this document.

REFERENCES

Barnett, S. (2002). Communication with deaf and hard-of-hearing people: A guide for medical education. *Academic Medicine*, 77 (7), 694-700.

Bellew, B., Raymond, I., Hughes, J. (2004). Principles *for better practice in Aboriginal health promotion*. NSW Department of Health. Gladesville, NSW: Better Health Centre. Available on-line: http://www.health.nsw.gov.au/pubs/2004/pdf/principlesaborginal.pdf

Berman, S. (1995). Otitis media in developing countries. *Pediatrics,* 96 (1), 126-131.

Bluestone, C. D. (1998). Epidemiology and pathogenesis of chronic suppurative otitis media: Implications for prevention and treatment. *International Journal of Pediatric Otorhinolaryngology,* 42 (3), 207-223.

Boswell, J. , Leach, A. , Nienhuys, T. , Kemp, K. & Mathews, J. (1994), Persistent otitis media in a cohort of Aboriginal infants: What, how and why. *Australian Journal of Audiology,* 15 (4), 36.

Bowd A. D. (2005). Otitis media: health and social consequences for Aboriginal youth in Canada's north. *International Journal of Circumpolar Health,* 64(1), 5-15.

Bowers, M. (1986). *Hearing impairment in prisoners*. Auckland, NZ: Deafness Research Foundation.

Burrow, S., Galloway, A. & Weissofner, N. (2009). Review of educational and other approaches to hearing loss among Indigenous people. *Australian Indigenous Health Bulletin*, 9 (2), 1-37. Available online: http://healthbulletin.org.au/articles/review-of-educational-and-other-approaches-to-hearing-loss-among-indigenous-people

Cavenagh, G. (2005). Inquest into the deaths of Kumanjay Presley, Kunmanara Coulthard and Kunmanara Brumby. Northern Territory Magistrates Court, NTMC 086. Downloaded from internet March 2006. Available online: http://www.nt.gov.au/justice/courtsupp/coroner/findings/2005/A22-04,%20A49-04,%20A54-04%20Petrol%20Sniffing.pdf

Couzos, S., Metcalf, S., & Murray, R. (2001). *Systematic review of existing evidence and primary care guidelines on the management of otitis media in Aboriginal and Torres Strait Islander populations*. Canberra, ACT: Health Media Unit, Commonwealth Department of Health and Aged Care.

Couzos, S., Lea, T., Mueller, R., Murray, R. & Culbong, M. (2003). *NACCHO Ear trial and school attendance project.* Deakin, ACT: National Aboriginal Community Controlled Health Organisation.

Eckersley. (2004). *Well and Good: How we Feel and why it Matters*. Melbourne: Text Publishing.

Erickson, F. & Mohatt, G. (1981). Cultural differences in teaching styles in Odawa schools: A sociolinguistic approach. In H. T. Trueba, G. P. Guthrie & H. H. Au (Eds), *Culture*

and the Bilingual Classroom: Studies in Classroom Ethnography. (pp. 105-119). Rowley, MA: Newbury House.

Finitzo-Hieber, T. & Tillman, T. (1978). Room acoustics effects on monosyllabic word discrimination ability for normal and hearing-impaired children. *Journal of Speech and Hearing Research*, 21, 440-458.

Forgays, D., Hasazi, J., & Wasserman, R. (1992). Recurrent otitis media and parenting stress in mothers of two-year-old children. *Journal of Developmental and Behavioral Pediatrics,* 13, 321-325.

Greville, K. A. (2001). *Hearing Impaired and Deaf People in New Zealand: Population numbers and characteristics*. Auckland, NZ: Greville Consulting. Available online: http://www.grevilleconsulting.co.nz/Hearing%20impaired%20and%20deaf%20people%20in%20New%20Zealand.doc

Haggard, M. & Hughes, E. (ed.) (1991), *Screening children's hearing: A review of the literature and the implications of otitis media*. London: HMSO.

Harris, S. (1980). *Culture and learning: Tradition and education in northeast Arnhemland.* Darwin, NT: Department of Education.

Hoff-Ginsberg, E. (1990). Maternal speech and the child's development of syntax: A further look. *Journal of Child Language, 17*, 85-99.

Hogan, S. & Moore, D. (2003). Impaired binaural hearing in children produced by a threshold level of middle ear disease, *Journal of the Association for Research in Otolaryngology*, 4, 123-129.

Hookey, T. (2007). *A framework for Action*. Paper presented at the Hear Speak Live Conference. Brisbane, QLD.

Howard, D. (1991). Mild hearing loss and Aboriginal children's learning. *The Aboriginal Child at School*. 19(1), 33-51.

Howard, D. (1993). Knowing who may have a hearing loss. *The Aboriginal Child at School,* 21(1), 27-33. Available online: http://www.eartroubles.com/attachments/Knowing%20who%20may%20have%20a%20hearing%20loss.pdf

Howard, D. (1994). Culturally responsive classrooms: a way to assist Aboriginal students with hearing loss in urban schools. In S. Harris & M. Malin (Eds), *Aboriginal Kids in Urban Classrooms*. (pp. 37-50). Wentworth Falls, NSW: Social Science Press.

Howard, D. (2004). Why we need more Aboriginal adults working with Aboriginal students. *The Australian Journal of Teacher Education*, 29 (1), 14-22. Available online: http://ajte.education.ecu.edu.au/ISSUES/PDF/291/Howard.pdf

Howard, D. (2006a). *Conductive hearing loss and behaviour problems amongst urban Indigenous students*. Unpublished PhD thesis. Darwin, NT: Charles Darwin University.

Howard, D. (2006b). *Mixed Messages: Cross-cultural management in Aboriginal community controlled health services*. Darwin, NT: Phoenix Consulting.

Howard, D. (2006c). *Communication, listening and criminal justice*. Magistrates' conference. Darwin, NT. Available online: http://archive.healthinfonet.ecu.edu.au/html/html_community/ear_health_community/resources/resources_pdfs/com_listening_crim_justice.pdf

Howard, D. (2007a). *Group Training Northern Territory Indigenous Hearing and Mentoring Strategy Project*. Final report to the Commonwealth Department of Education, Science and Training. Darwin, NT: Phoenix Consulting.

Howard, D. (2007b). *Indigenous housing, hearing loss and social problems.* Available online: http://www.eartroubles.com/attachments/Indigenous%20Housing%20Hearing%20Loss%20and%20Social%20Problems2.pdf

Howard, D. (2009). Ear disease, anxiety and Indigenous access to health and education services
Paper presented at the 2009 Ear Health Conference, Kalgoorlie, Western Australia. Available online: http://docs.google.com/fileview?id=0B_d1t7bYdIAsOTI2ODA0ZGYtYzVmYy00NWRkLWFiNGQtOGIxZTg2YWU0NzM4&hl=en

Howard, D. and Hampton, D. (2006). Ear disease and Aboriginal families. *Aboriginal and Islander Health Worker Journal*, 30 (4), 9-16. Available online: http://archive.healthinfonet.ecu.edu.au/html/html_community/ear_health_community/publications/aihwj_howard.pdf

Howard, D and Henderson, I. (2009). *Supporting Employees who have a Hearing Loss – A Guide for Supervisors and Mentors*. Darwin, NT: Phoenix Consulting.

Howard, D., Quinn, S., Blokland, J., & Flynn, M. (1991). Aboriginal hearing loss and the criminal justice system. *Aboriginal Law Bulletin*, 3 (65), 9-11. Available online: http://www.austlii.edu.au/au/journals/AboriginalLB/1993/58.html

Jacobs, A. (1988). *A descriptive study of the bilingual language development of Aboriginal children in the eastern goldfields region of Western Australia.* Unpublished report.

Kickett-Tucker, C. S. (1999, Nov 29 – Dec 2). School sport self-concept of urban Aboriginal school children: Teacher Influences. Paper presented at the Joint Conference of the Australian Association for Research in Education and the New Zealand Association for Research in Education, Melbourne, Australia. Eric #ED441650. Available online:

http://www.eric.ed.gov/ERICWebPortal/custom/portlets/recordDetails/detailmini.jsp?_nfpb=true&_&ERICExtSearch_SearchValue_0=ED441650&ERICExtSearch_SearchType_0=no&accno=ED441650

Kvam, M. H., Loeb, M. & Tambs, K. (2007). Mental health in deaf adults: Symptoms of anxiety and depression among hearing and deaf individuals. *Journal of Deaf Studies and Deaf Education*, 12 (1), 1-7.

Lay, K. (1990). *Hearing loss in an adult Aboriginal population.* Unpublished thesis. Brisbane, QLD: University of Queensland.

Leach, A. J., Morris, P. S., Mathews, J. D. (2008). Compared to placebo, long-term antibiotics resolve otitis media with effusion (OME) and prevent acute otitis media with perforation (AOMwiP) in a high-risk population: A randomized controlled trial. *BMC Pediatrics*, 8, 23. Available on-line: http://www.biomedcentral.com/content/pdf/1471-2431-8-23.pdf

Lowell, A. (1994). *Communication and learning in an Aboriginal school: the influence of Conductive Hearing Loss*. Unpublished PhD thesis. Sydney, NSW: University of Sydney.

Lowell, A., Brown, I., Marr\anyin, B., Flack, M., Christie, M., Snelling, P. & Cass, A., 2005, *Sharing the true stories, Improving communication between health staff and Aboriginal patients, STAGE 1 Report,* Cooperative Research Centre for Aboriginal Health, Darwin. Available online: http://www.crcah.org.au/publications/downloads/STTS_stage1.pdf

Malin, M. (1990). Why is life so hard for Aboriginal students in urban classrooms? *Aboriginal Child at School*, 18 (1), 9-29.

Massie, R. (1999). *The effects of sound field classroom amplification on the communicative interactions of Aboriginal and Torres Strait Islander children*. Unpublished PhD thesis. Brisbane, QLD: University of Queensland.

Morris, P.S., Leach, A.J., Halpin, S., Mellon, G., Gadil, G., Wigger, C., Mackenzie, G., Wilson, C., Gadil, E. & Torzillo, P. (2007). An overview of acute otitis media in Australian Aboriginal children living in remote communities. *Vaccine*, 24 (13), 2389-2393.

Morris, P., Leach, A., Mellon, G., Wilson, K., Hare, K., Kennedy, M., Carter, E.,. Beissbarth, J. & Halpin,,S. (2005). *Report on Prevention of Otitis Media with Prevenar and Training* (PROMPT). Darwin: Menzies School of Health Research.

Murray, N. & La Page, E. (2004). Hearing health of New South Wales prison inmates. *Australian and New Zealand Journal of Public Health*, 28, 537-541.

Nienhuys, T.G. (1992). The significance of prelingual Conductive Hearing Loss for auditory and linguistic development of Aboriginal infants. *Conference Proceedings Medical Options for Prevention and Treatment of Otitis Media in Australian Aboriginal Infants,*

Menzies School of Health Research and the Australian Doctors Fund Darwin, 16-18 February. Available online: http://www.adf.com.au/archive.php?doc_id=137

Queensland Department of Education. (2001). *Otitis Media: Review of existing service delivery model for Aboriginal and Torres Strait Islander students with high educational needs arising from conductive hearing loss as a result of otitis media*. Low Incidence Unit, Hearing Impairment Services, Brisbane, QLD.

Richards, K. (2009). *Juveniles' contact with the criminal justice system in Australia*. Canberra: Australian Institute of Criminology. Available online: http://www.aic.gov.au/documents/E/F/0/%7BEF09BB44-FC3D-41BD-81CD-808DE9D0DF99%7Dmr07.pdf

Roberts, J. E., Burchinal, M. R., & Clarke-Klein, S. M. (1995). 'Otitis media in early childhood and cognitive, academic, and behaviour outcomes at12 years of age.' *Journal of Pediatric Psychology*, 20, 645-660.

Swann, P. & Raphael, B. (1995). Ways forward: The national consultancy report on Aboriginal and Torres Strait Islander mental health. Canberra: Australian Government Publishing Service.

Trychin & Boone, (1987). *Mental Health Practitioners' Guide*. Available online: http://www.ifhoh.org/papers/trychin2.htm

Vibbert, M., & Bornstein, M. H. (1989). 'Specific associations between domains of mother-child interaction and toddler language and pretence play.' *Infant Behavior and Development, 12*, 163-184.

Whitlock, J. & Dodd, G. (2003). *Classroom Acoustics Milestone 6 Report: An investigation of the classroom acoustic needs of primary school children.* Auckland, NZ: Auckland Uniservices. Available online:http://search.minedu.govt.nz/search?q=classroom+acoustics&client=minedu_frontend&output=xml_no_dtd&site=minedu&proxystylesheet=minedu_frontend&sourcehostname=www.minedu.govt.nz&getfields=NZGLS%252Edescription

Wilson, O., Valentine, J., Halstead, M., McGunnigle, K., Dodd, G., Hellier, A., et al. (2002). *Classroom acoustics: a New Zealand perspective*. Wellington, NZ: Oticon Foundation. Available online: http://www.oticon.org.nz/pdf/ClassroomAcousticsReportprintedversion.pdf

World Health Organisation (WHO). (1996). *Prevention of hearing impairment from chronic otitis media*. Report of a WHO/CIBA Foundation workshop, London, 19-21 November 1996. Available online at: http://www.who.int/pbd/deafness/en/chronic_otitis_media.pdf

Yacci, M.R. (2005). Recreational noise exposure and its effects on the hearing of adolescents. Part I: An interdisciplinary long-term study. *International Journal of Audiology*, 44, 65–73.

Yonovitz, L & Yonovitz, A. (2000). PA-EFL: A phonological awareness program for indigenous EFL students with hearing disabilities, *Teaching English as a Second or Foreign Language,* 4(4). Available online: http://www.kyoto-su.ac.jp/information/tesl-ej/ej16/cf1.html

Zubrick, S. R, Lawrence, D. M., Silburn, S. R., Blair, E., Milroy, H., Wilkes, T., Eades, S., D'Antoine, H., Read, A., Ishiguchi, P., Doyle S. (2004). *The Western Australian Aboriginal child health survey: the health of Aboriginal children and young people*. Perth: Telethon Institute for Child Health Research. Available online: http://www.ichr.uwa.edu.au/files/user17/Volume1_Complete.pdf